Western Refining Southwest LLC
A subsidiary of Marathon Petroleum Corporation
I-40 Exit 39
Jamestown, NM 87347

March 31, 2022

Mr. Kevin Pierard, Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

RE: 2021 Annual Monitored Natural Attenuation Report
Western Refining Southwest LLC, D/B/A Marathon Gallup Refinery
EPA ID# NMD000333211

Dear Mr. Pierard,

Please find enclosed the 2021 Annual Monitored Natural Attenuation Report for the Western Refining Southwest LLC, D/B/A Marathon Gallup Refinery. If you have any questions or comments regarding the information contained herein, please do not hesitate to contact John Moore at (505) 879-7643.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction of supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,
Western Refining Southwest LLC, D/B/A Marathon Gallup Refinery

Ruth A Cade

Ruth Cade
Vice-President

Enclosure

cc: D. Cobrain, NMED HWB
M. Suzuki, NMED HWB
L. Barr, NMOCD
K. Luka, Marathon Petroleum Corporation
M. Bracey, Marathon Petroleum Corporation
J. Moore, Marathon Gallup Refinery
H. Jones, Trihydro Corporation

2021 ANNUAL MONITORED NATURAL ATTENUATION REPORT

WESTERN REFINING SOUTHWEST LLC

D/B/A MARATHON GALLUP REFINERY

MARCH 31, 2022

Executive Summary

This report presents the results of a monitored natural attenuation (MNA) evaluation of chlorinated volatile organic compounds (CVOCs) and methyl tert-butyl ether (MTBE) in the Hydrocarbon Seep Area of the Western Refining Southwest LLC (dba Marathon Gallup Refinery [Refinery]) in Gallup, New Mexico (see Section 1.0, Figure 1-1). The Hydrocarbon Seep Area is located in the western portion of the Refinery to the west-southwest of the tank farm (see Section 1.0, Figure 1-2). Historically, the Hydrocarbon Seep Area has been impacted by releases of separate phase hydrocarbon (SPH) associated with refinery operation. In February 2018, the New Mexico Environment Department (NMED) requested in the "Disapproval, Interim Measures Report Hydrocarbon Seep Area, Western Refining Southwest Inc., Gallup Refinery, EPA ID# NMD000333211, HWB-WRG-15-002" that the Hydrocarbon Seep Area will be monitored for natural attenuation.

Sixteen wells are included as part of the MNA program. These monitoring wells are located in the Hydrocarbon Seep Area or in a hydraulically upgradient area. CVOCs detected in groundwater as part of routine quarterly monitoring in this area include tetrachloroethene, trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), 1,1-dichloroethane (1,1-DCA), 1,2 dichloroethane (1,2-DCA), and vinyl chloride. Non-chlorinated volatile organic compounds (VOCs) detected above the New Mexico Environment Department (NMED) Groundwater Cleanup Level standards include benzene, toluene, ethylbenzene, total xylenes, and MTBE.

The MNA analysis used for this assessment follows the U.S. Environmental Protection Agency (USEPA) procedures for MNA evaluation of CVOCs (USEPA 1998), which includes:

- An evaluation of MNA by-products and pre-cursors to infer the presence of natural biodegradation over the period of 2018 to 2021 in 14 monitoring wells.
- A statistical evaluation of contaminant concentration trends over the period of 2014 to 2021 in eight wells.

Using USEPA's scoring system for assessing the strength of evidence for inferring natural attenuation of CVOCs, the scores for 14 wells with detectable concentrations of CVOCs ranged from 7 to 15. Based on USEPA's criteria and these scores, the evidence for natural attenuation was "Limited" in 13 wells and was "Adequate" in one well. There were no wells in which the evidence was deemed "Inadequate". Two wells (MKTF-20 and MKTF-21) were not evaluated due to no detectable CVOCs from 2018 to 2021.

The results of the MNA statistical analysis of CVOC analytical data from eight wells conducted using Mann-Kendall (MK) trend analysis over the period of 2014 to 2021 indicate evidence of decreasing monotonic trends since 2014 (95% confidence) for 1,1-DCA, 1,1-DCE, cis-1,2-DCE, and TCE in wells MKTF-02, MKTF-09, MKTF-24, and MKTF-25. Monotonic increasing trends were evident since 2014 (95% confidence) for 1,1-DCE in wells MKTF-10 and MKTF-22 and vinyl chloride in wells MKTF-02,



MKTF-10, MKTF-16, MKTF-24, and MKTF-25. Other well/analyte pairs did not show a statistically significant trend.

For MTBE, the MK trend analysis for 11 wells found evidence of decreasing monotonic trends since 2014 (95% confidence) in wells MKTF-09, MKTF-16, MKTF-21, and MKTF-24. The trend analysis showed evidence of monotonic increasing trend since 2014 (95% confidence) for MTBE in well MKTF-25. Other wells did not show a statistically significant trend. CVOC and MTBE trend analyses are presented in Tables 4-1 and 4-2, included in Section 4.0 of this report.

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D. MTBE TIME SERIES PLOTS

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List of Acronyms

%	percent
1,1-DCA	1,1-dichloroethane
1,1-DCE	1,1-dichloroethene
1,2-DCA	1,2-dichloroethane
CVOC	chlorinated volatile organic compound
D/B/A	doing business as
DO	dissolved oxygen
ft	feet
ft/d	feet per day
I-40	Interstate 40
MDL	method detection limit
MK	Mann-Kendall
MKTF	Marketing Tank Farm
MNA	monitored natural attenuation
MTBE	methyl tert-butyl ether
ND	non-detect
NM	New Mexico
NMED	New Mexico Environment Department
ORP	oxidation reduction potential
PCE	tetrachloroethene
Refinery	Marathon Gallup Refinery
SPH	separate phase hydrocarbon
TBA	tertiary butyl alcohol
TCE	trichloroethene
USEPA	United States Environmental Protection Agency

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1.0 Introduction

This report presents the results of a monitored natural attenuation (MNA) evaluation of chlorinated volatile organic compounds (CVOCs) and methyl tert-butyl ether (MTBE) in the Hydrocarbon Seep Area of the Western Refining Southwest LLC (dba Marathon Gallup Refinery [Refinery]) in Gallup, New Mexico (NM) (Figure 1-1). This evaluation was conducted in general accordance with the "Response to Approval with Modifications, Natural Attenuation Assessment and Proposed Workplan for the Hydrocarbon Seep Area" (proposed Work Plan) (Western 2021). Because the proposed Work Plan was not approved in 2021, some elements were not implemented (see Section 3.3).

The Hydrocarbon Seep Area is located in the western portion of the Refinery to the west-southwest of the refinery tank farm (Figure 1-2). Historically, the Hydrocarbon Seep Area has been impacted by releases of separate phase hydrocarbon (SPH) associated with refinery operation. Hydrocarbon seeps were discovered in 2013. In February 2018, the New Mexico Environment Department (NMED) requested in the "Disapproval, Interim Measures Report Hydrocarbon Seep Area, Western Refining Southwest Inc., Gallup Refinery, EPA ID# NMD000333211, HWB-WRG-15-002" that the Hydrocarbon Seep Area will be monitored for natural attenuation.

Built in the 1950s, the Refinery is located within a rural and sparsely populated area east of Gallup, NM. The nearest population centers are the Pilot Flying J Travel Center refueling plaza, the Interstate 40 (I-40) corridor, and a small cluster of residential homes located on the south side of I-40 approximately 2 miles southwest of the Refinery (Jamestown, NM).

The Refinery was indefinitely idled on October 9, 2020. During operation, the Refinery was a crude oil refining and petroleum products manufacturing facility. There were no organic chemicals, plastics, or synthetic fibers manufactured that contributed to the process flow of wastewater. The Refinery did not manufacturer lubricating oils. As a result of the processing steps, the Refinery produced a wide range of petroleum products including propane, butane, unleaded gasoline, diesel, residual fuel, and commercial products of fertilizer and solid elemental sulfur.

Historically, the Refinery primarily received crude oil via two 6-inch diameter pipelines, which entered the Refinery property from the north (Four Corners Area). In addition, the Refinery also received natural gasoline feedstock via a 4-inch diameter pipeline that came in from the west along the I-40 corridor from the Western Refining Southwest LLC – Wingate Plant, which is also indefinitely idled. Crude oil and other products also arrived at the Refinery via railroad cars. These feed stocks were then stored in tanks until refined into products.

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2.0 Site Conditions

The Refinery is located within a rural and sparsely populated section of McKinley County, NM. It is situated in the high desert plain on the western flank of the Continental Divide approximately 17 miles east of Gallup, NM. The surrounding land is comprised primarily of public and private lands used for cattle and sheep grazing.

2.1 Site Topography

Local topography consists of a gradually inclined land surface from high ground in the southeast to a lowland fluvial plain in the northwest. The highest point on Refinery property is located at the southeast corner boundary (elevation approximately 7,040 feet [ft]) and the lowest point is located at the northwest corner boundary (elevation approximately 6,860 ft). Surface soils within most of the area of investigation are primarily Rehobeth silty clay loam. The Refinery is located on a flat man-made terrace.

2.2 Surface Water

Surface water in the Refinery consists of the man-made evaporation ponds and aeration basins. There are several storm water conveyance ditches located throughout the Refinery. These ditches are discharged into basins where storm water is collected and allowed to evaporate or discharged into two designated outfalls.

2.3 Geology

Site boring logs indicate that subsurface fluvial and alluvial soils are primarily comprised of clays and silts with discontinuous inter-bedded sand layers. Very low permeability bedrock (e.g., claystones and siltstones) underlie the surface soils. The Chinle Group, from the Upper Triassic period, crops out over a large area south of the Refinery. The uppermost subunit within the Chinle Group is the Petrified Forest Formation, which is also sometimes referred to as the Petrified Forest Member. Inter-bedded within the Chinle Group is the Sonsela Sandstone bed, which lies within and parallels the dip of the Chinle Group. Its high point is located southeast of the Refinery and slopes downward to the northwest as it passes under the Refinery. Due to the hydraulic confinement of the Petrified Forest Formation aquitard, the Sonsela Sandstone bed acts as a water-bearing reservoir and is artesian at its lower extremis. Artesian conditions exist through much of the central and western portions of the Refinery.

2.4 Hydrogeology

Groundwater flow within the shallow alluvium and the upper Chinle Formation is highly variable due to the presence of complex and irregular stratigraphy including sand stringers, cobble beds, and dense clay layers. According to previous reports, hydraulic conductivity ranges from 30 ft per day (ft/d) for gravel-like sands immediately overlying the Petrified Forest Formation to 3 x 10^{-5} ft/d in the clay soils located near the surface (Western 2020). Groundwater flow within the Lower Chinle Formation is extremely slow and typically averages less than 2.83 x 10^{-7} ft/d (i.e., less than 0.01 ft per year).

Water level data are collected routinely at the Refinery. Wells at the Refinery have been categorized based on the hydrogeologic unit in which they are screened, including the Alluvial/Fluvial Upper Sand Aquifer, the Chinle/Alluvium Aquifer, and the Sonsela Aquifer. The Alluvial/Fluvial Upper Sand Aquifer has a limited aerial extent, existing only on the western margin on the Refinery. Groundwater occurrence in this aquifer is seasonal and limited.

The majority of the wells monitored lie within the shallow weathered sediments that comprise the Chinle/Alluvium Aquifer. Within the Chinle/Alluvium Aquifer, shallow groundwater located under the Refinery property generally flows along the upper contact of the Chinle Formation. The prevailing flow is from the southeast to the northwest, although localized areas may have varying flow directions based on the subsurface geology. The 16 wells in the MNA program are completed in this aquifer.

Groundwater within the Sonsela Aquifer flows southeast to northwest. Hydraulic heads measured within the Sonsela Aquifer are generally lower than those observed within the shallow aquifer near the topographic high on which the Refinery process area and tank farm are situated, and higher than those observed within the shallow aquifer in topographically low areas to the west and northwest, near the evaporation ponds. The higher head in the Sonsela Aquifer in low areas is due to confining pressure from lower permeability Chinle Formation bedrock between the shallow Chinle/Alluvium Aquifer and the Sonsela Aquifer bed at depth, which makes the Sonsela Aquifer artesian.

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3.0 MNA Monitoring Program

Per the proposed Work Plan (Western 2021), 13 wells were selected for the MNA program. The wells consist of Marketing Tank Farm (MKTF) designated wells located within and hydraulically upgradient of the Hydrocarbon Seep Area. These wells contain CVOCs above the NMED Groundwater Cleanup Levels (New Mexico Administrative Code 20.6.2.3103) and MTBE above the NMED Tap Water Standards (Risk Assessment Guidance, Table A-1, Tap Water, March 2017). In addition, the selected wells did not contain detectable SPH in 2020.

The MNA wells originally included: MKTF-02, MKTF-04, MKTF-09, MKTF-10, MKTF-13, MKTF-16, MKTF-17, MKTF-19, MKTF-20, MKTF-21, MKTF-22, MKTF-24, and MKTF-25. In 2021, wells MKTF-02R, MKTF-04R, and MKTF-17R replaced wells MKTF-02, MKTF-04 and MKTF-17, respectively. Data from MKTF-02, MKTF-04, and MKTF-17 are included in the 2021 evaluation alongside the new replacement well data. Figure 3-1 presents the 16 MNA wells that were evaluated.

CVOCs detected in groundwater as part of routine quarterly monitoring in the Hydrocarbon Seep Area between 2014 and 2021, include: tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), and vinyl chloride. Hydrocarbon VOCs detected above the NMED Groundwater Cleanup Level standards include benzene, toluene, ethylbenzene, total xylenes (BTEX), and MTBE. Monitoring wells with consistent detections of CVOCs and MTBE are shown in Figure 3-1. Monitoring wells with consistent detection of vinyl chloride are shown in Figure 3-2.

The following analyte list was proposed for the MNA program:

- BTEX, MTBE, tertiary butyl alcohol (TBA), PCE, TCE, cis-1,2-DCE, 1,1-DCE, 1,1-DCA, 1,2-DCA, and vinyl chloride
- Dissolved/total iron and manganese, nitrate/nitrite, and sulfate/sulfide to determine their availability as terminal electron receptors and the redox state
- Chloride as the end point of 1,1-DCA and 1,2-DCA degradation
- Field parameters such as pH, temperature, oxidation reduction potential (ORP), and dissolved oxygen (DO)

In addition, ethene, ethane, and methane analysis will be conducted in four monitoring wells with elevated vinyl chloride concentrations (MKTF-2, MKTF-10, MKTF-24, and MKTF-25)

3.1 MNA Sampling Results

Table 3-1 presents the most recent groundwater analytical data (2018 to 2021) from the Hydrocarbon Seep Area wells, including organic and inorganic analytes, DO, temperature, and ORP. DO and ORP measurements were conducted using bailed water from a well, which was then placed in a container for subsequent DO and ORP measurements using a calibrated field instrument equipped with a silver/silver chloride reference electrode. This method potentially introduces oxygen from exposure to air in the open container, which could potentially increase DO and ORP measurements.

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These data are used to evaluate the potential for MNA in procedures developed by the U.S. Environmental Protection Agency (USEPA) (USEPA 1998) and the American Petroleum Institute (API 2007). Laboratory data are provided in Appendix A. Data validation reports are presented in Appendix B.

3.2 MNA Criteria and Scoring

From a more quantitative standpoint, an evaluation was conducted on a well-by-well basis in accordance with USEPA guidance (USEPA 1998). Table 3-2 presents the scoring criteria from the USEPA and the applicability of the criteria to the Hydrocarbon Seep Area, given the analytical requirements of the proposed Work Plan (Western 2021) and current field sampling practices. Table 3-2 shows the implementation of the scoring for each well, and presents the final evaluation score for each well, which summarizes the potential for CVOC natural attenuation (reductive dichlorination). Four categories of scores assess the potential for anaerobic biodegradation of CVOCs, as follows:

- > 20 Strong evidence
- 15 to 20 Adequate evidence
- 6 to 14 Limited evidence
- 0 to 5 Inadequate evidence.

As shown in Table 3-3, the evidentiary scores for the 14 wells scored in the analysis ranged from 7 to 15, with 13 wells deemed “Limited” category and one well deemed “Adequate” using USEPA’s nomenclature for the scoring ranges. Two wells (MKTF-20 and MKTF-21) were not evaluated due to no detectable CVOCs from 2018 to 2021. In addition, MKTF-20 and MKTF-21 have never had detectable CVOCs.

3.3 Deviations from the Proposed Work Plan

Deviations to the proposed Work Plan occurred during 2021. Completion of these elements is expected in 2022. The following work was not completed in 2021:

- MKTF-16, MKTF-21, and MKTF-24 were purged dry. For this reason, dissolved iron and dissolved manganese were not sampled in MKTF-16 and MKTF-21 during the first quarter. Total iron and total manganese were not sampled in MKTF-16 during the first quarter. Nitrate/nitrite analysis was not conducted in the first quarter and third quarter in MKTF-16 and fourth quarter in MKTF-24. Sulfate/sulfide analysis was not conducted in MKTF-16 during the first quarter. Chloride analysis was not conducted in MKTF-16 during the first quarter.
- MKTF-09, MKTF-13, MKTF-19, MKTF-20, and MKTF-22 were not sampled in 2021 due to SPH.
- The proposed Work Plan did not receive approval during the 2021 sampling period. For this reason, TBA analysis was not conducted in any wells. Ethene, ethane, and methane analysis were not conducted in MKTF-02, MKTF-02R, MKTF-10, MKTF-24, and MKTF-25.



4.0 Statistical Analysis

The following describes the methods used and results obtained during the 2021 statistical evaluation of the data from Marathon Petroleum Company, Gallup Refinery. Data collected are used to determine if the analytical data results from the current monitoring period represent statistical upward or downward trends in analyte concentrations in the groundwater samples collected from MKTF-designated wells. Data trend graphs covering the period 2014 to 2021 for CVOCs and MTBE are shown in Appendix C and Appendix D, respectively.

4.1 Statistical Methods

4.1.1 Quality Assurance/Quality Control and Data Handling

Trace concentrations (estimated results between the reporting limit and the method detection limit [MDL]) reported since June 8, 2016, were treated as true detected values. Therefore, being the upper bound of non-detect (ND) results, the MDL was used as a substitute value for ND values in all statistical evaluations, unless stated otherwise (see Mann-Kendall (MK) trend analysis section). R® (R Core Team, 2020), a programing language and software environment for statistical analysis, was used for all statistical needs.

The statistical evaluation was performed for six chlorinated volatile organic compounds (CVOCs; 1,1-DCA, 1,1-DCE, 1,2-DCA, cis-1,2-DCE, TCE, and vinyl chloride) and MTBE. All constituents were reported in milligrams per liter. Eight wells for CVOCs (i.e., MKTF-02, MKTF-02R, MKTF-09, MKTF-10, MKTF-16, MKTF-22, MKTF-24, MKTF-25) and 13 wells for MTBE (i.e. MKTF-04, MKTF-04R, MKTF-09, MKTF-16, MKTF-17, MKTF-17R, MKTF-19, MKTF-20, MKTF-21, MKTF-22, MKTF-23, MKTF-24, MKTF-25) were part of the 2021 evaluation. Wells MKTF-02R, MKTF-04R, and MKTF-17R are replacement wells for MKTF-02, MKTF-04, and MKTF-17, respectively, and were installed in 2021.

4.1.2 Exploratory Data Analysis and General Statistics

Exploratory Data Analysis was performed on all well-analyte combinations and are presented in Table 4-1 and Table 4-2, for the CVOCs and MTBE respectively. For each analyte-location pair, these statistics include the number of samples collected since April 8, 2014, the overall detection rate, the minimum and maximum detected concentrations, the minimum and maximum MDLs reported by laboratories, the overall sample mean, median, and sample standard deviation, and the dates of the range of the first and last sample.

4.1.3 Time Series Plots and Outlier Analysis

Outlier analysis was performed at a 95 percent (%) confidence level using the Dixon's and Grubbs' tests when the sample size for each analyte-location pair, n, was more than 4 but less than 30, with at least one detected result. If the sample size was greater than 25, then the Rosner's test was used instead of or in addition to the two tests mentioned above and up to 3 potential outliers were considered. Because outlier tests' assumptions are often difficult to attain with real data, and the presence of one

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outlier can mask the detection of another, any extreme and unusual values flagged as outliers by any of the outlier tests (e.g., concentration 3 times greater or 1/3 smaller than the overall concentration, excluding the most recent result) were graphically confirmed using time series plots. The last results were never considered an outlier because there is not sufficient evidence that it is a one-time elevated concentration. Results from the outlier analysis are also presented in Table 4-1 (CVOCs) and Table 4-2 (MTBE).

For each analyte-location pair, time series plots were constructed to show any potential trend in CVOCs and MTBE. In addition, any graphically confirmed outliers were also shown on the time series plots (Appendices B [CVOCs] and C [MTBE]).

4.1.4 Nonparametric Trend Analysis

Non-parametric trend analysis was conducted for all analyte-location pairs with a sample size equal to or greater than 8 (not including graphically confirmed outliers) and one detected result above the MDL to assess the temporal stationarity of the constituents' concentrations through time. To avoid trends in the MDLs driving the trend analysis results, the USEPA (2009) recommends ND values be assigned "a common value lower than any of the detected measurements" (EPA 2009, Section 17.3.2 p. 17-31). ND values were assigned half of the minimum MDLs in each location for all analyses related to the trend analysis. Trend analyses were performed using the nonparametric approach, MK's monotonic trend analysis. Traditional MK trend analysis relies on several assumptions such as no serial correlation, no outliers, and no seasonality. The presence of serial correlation was tested for at each location using the rank von Neumann ratio test at 95% confidence level and the results were graphically confirmed using Autocorrelation Function and Partial Autocorrelation Function. The presence of outliers in the data was addressed during the outlier analysis described above. Seasonal effects between the Summer-Fall (May to October) and Winter-Spring (November to April) sampling events were tested using Wilcoxon-Mann-Whitney tests at a 90% confidence level. The assumption of homogeneity of variance between the two seasons for the Wilcoxon tests for each constituent of concern well combination was performed using the traditional Levene's test. In the absence of both serial autocorrelation and seasonal effect, the traditional MK trend analysis test was used. When serial correlation was identified, a modified MK test for serially correlated data using the Yue and Wang (Yue, 2004) variance correction approach was used. When seasonality was present in the data, a standard seasonal MK test, which performs a nonparametric test for a monotonic trend within each season based on Kendall's tau statistic, was used. Finally, if the presence of both serial correlation and seasonality in the data was confirmed the seasonal MK approach was adapted to handle serial correlation. Results from all trend analyses for the CVOCs are presented in Table 4-1 and for MTBE in Table 4-2.

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4.2 Results

4.2.1 CVOCs

Nonparametric monotonic increasing trends were identified since 2014 for the following analyte-well pairs with 95% confidence (Table 4-1):

- 1,1-DCE in wells MKTF-10 and MKTF-22
- Vinyl Chloride in wells MKTF-02, MKTF-10, MKTF-16, MKTF-24, and MKTF-25

In addition, evidence of decreasing monotonic trends since 2014 was found, with 95% confidence, for 1,1-DCA, 1,1-DCE, cis-1,2-DCE, and TCE in wells MKTF-02, MKTF-09, MKTF-24, and MKTF-25.

All other analyte-well pairs meeting the sample size and detection requirements showed no evidence of an overall trend since 2014 at a 95% confidence level.

4.2.2 MTBE

The MK trend analysis test found evidence of a monotonic increasing trend since 2014 for MTBE in well MKTF-25 with 95% confidence (Table 4-2).

In addition, evidence of decreasing monotonic trends since 2014 was found, with 95% confidence, for MTBE in wells MKTF-09, MKTF-16, MKTF-21, and MKTF-24.

All other analyte-well pairs meeting the sample size and detection requirements showed no evidence of an overall trend since 2014 at a 95% confidence level.

5.0 Conclusions

The MNA assessment used USEPA procedures for MNA evaluation (US EPA 1998), which included an evaluation of MNA by-products and pre-cursors to infer the presence of natural biodegradation over the period of 2018 to 2021 and a statistical evaluation of contaminant concentration trends over the period of 2014 to 2021. The date range for MNA was selected to represent current conditions for the analysis of the key MNA parameters. Statistical analysis, however, was conducted using data from the period 2014 through 2021 to evaluate long-term conditions. The report used monitoring well analytical data in the Hydrocarbon Seep Area and in hydraulically upgradient areas.

Using USEPA's scoring system for assessing the strength of evidence for inferring natural attenuation of CVOCs, the scores for the 14 wells included in the analysis ranged from 7 to 15. Based on USEPA's criteria and these scores, the evidence for natural attenuation was "Limited" in 13 wells and was "Adequate" in one well. There were no wells in which the evidence was deemed "Inadequate". The time period of the analysis was 2018 to 2021 to best represent current geochemical conditions.

The results of the MNA statistical analysis of CVOC analytical data from eight wells conducted using MK trend analysis over the period of 2014 to 2021 indicate evidence of decreasing monotonic trends since 2014 (95% confidence) for 1,1-DCA, 1,1-DCE, cis-1,2-DCE, and TCE in wells MKTF-02, MKTF-09, MKTF-24, and MKTF-25. Monotonic increasing trends were evident since 2014 (95% confidence) for 1,1-DCE in wells MKTF-10 and MKTF-22 and vinyl chloride in wells MKTF-02, MKTF-10, MKTF-16, MKTF-24, and MKTF-25. Other well/analyte pairs did not show a statistically significant trend.

For MTBE, the MK trend analysis for 11 wells found evidence of decreasing monotonic trends since 2014 (95% confidence) in wells MKTF-09, MKTF-16, MKTF-21, and MKTF-24. The trend analysis showed evidence of monotonic increasing trend since 2014 (95% confidence) for MTBE in well MKTF-25. Other wells did not show a statistically significant trend.

Because the proposed Work Plan was not approved in 2021, deviations occurred given the date of receipt of NMED's approval with modification (September 28, 2021) and previously scheduled 2021 monitoring wells sampling. As a results, several analytes were not sampled in 2021, including degradation products TBA and dissolved gases ethane and ethene. These and other analyses not performed in 2021 will be completed in 2022. Based on the initial evaluation, we recommend continuing the MNA monitoring program.



6.0 References

American Petroleum Institute. 2007. Technical Protocol for Evaluating the Natural Attenuation of MtBE, Regulatory and Scientific Affairs Department, Publication 4761. May.

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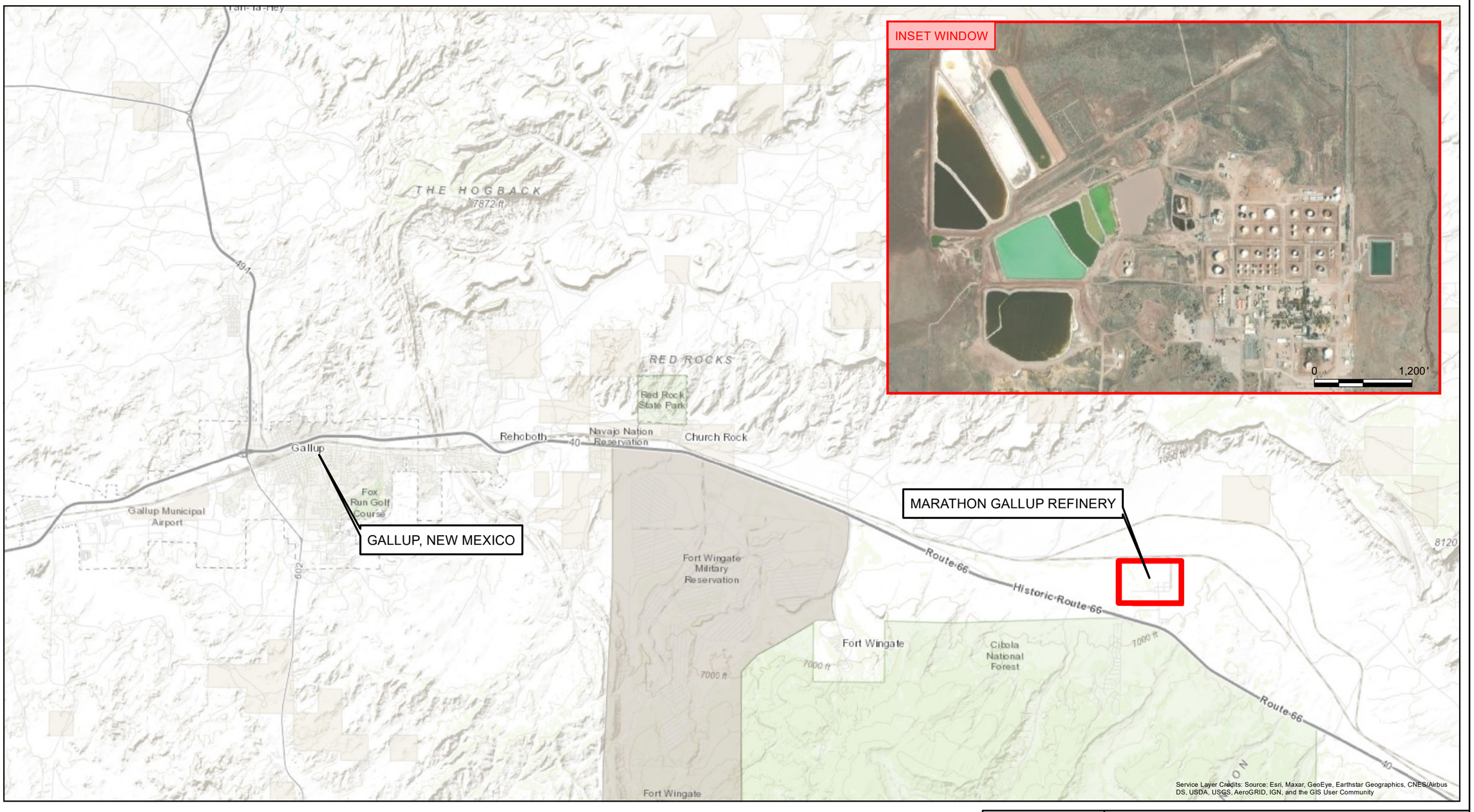
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Figures

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NOTE:

SITE LEGAL DESCRIPTION: TOWNSHIP 15 NORTH, RANGE 15 WEST, SECTION 33

N

0 2 Miles

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FIGURE 1-1

SITE LOCATION MAP

WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: BR	Checked By: LA	Scale: 1 " = 2 Miles	Date: 3/14/22	File: 1-1_SiteLocation_Fig1-1.mxd

\\TRIHYDRO.COM\CLIENTS\ITON\MARATHON\GIS\GALLUP\MAPPING\SITEWIDE_FIGURES\WELLS2021\07_REFINERY\ADDITIONALWELLS\NSTALL1-1_SITELOCATION_FIG1-1.MXD

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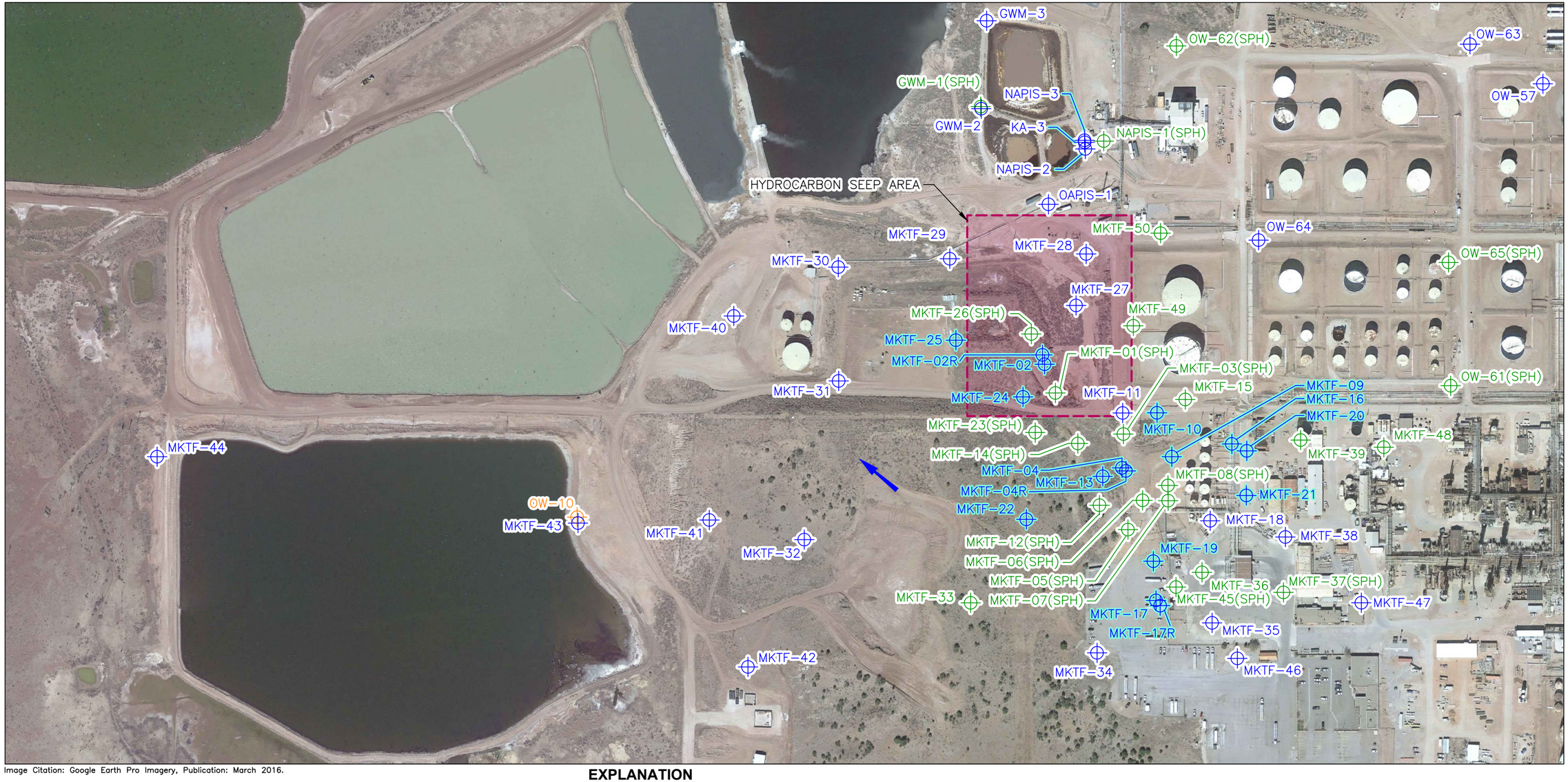


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EXPLANATION

OW-10	SONSELA WELL AND DESIGNATION
MKTF-42	CHINLE/ALLUVIUM INTERFACE WELL AND DESIGNATION
MKTF-45	SPH MONITORING WELL AND DESIGNATION
MKTF-17	MKTF MNA WELL
	GENERAL GROUNDWATER FLOW DIRECTION
	HYDROCARBON SEEP AREA

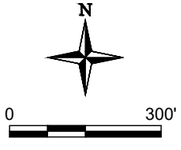
MKTF	MARKETING TANK FARM
MNA	MONITORED NATURAL ATTENUATION
SPH	SEPARATE PHASE HYDROCARBON (DETECTED DURING THIRD QUARTER 2021 SAMPLING EVENT)



QUADRANGLE LOCATION

NOTE:

SITE LEGAL DESCRIPTION -
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FIGURE 1-2

HYDROCARBON SEEP AREA AND MNA WELL SET

**WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY
GALLUP, NEW MEXICO**

Drawn By: REP	Checked By: MS	Scale: 1" = 300'	Date: 3/14/22	File: 697-MNA-SITE-202111

\\TRIHYDRO.COM\CLIENTS\TON\MARATHON\CADD\GALLUP_REPORTS\HYDROCARBONSEEPAREA\MNA_EVALUATION\697-MNA-SITE-202111

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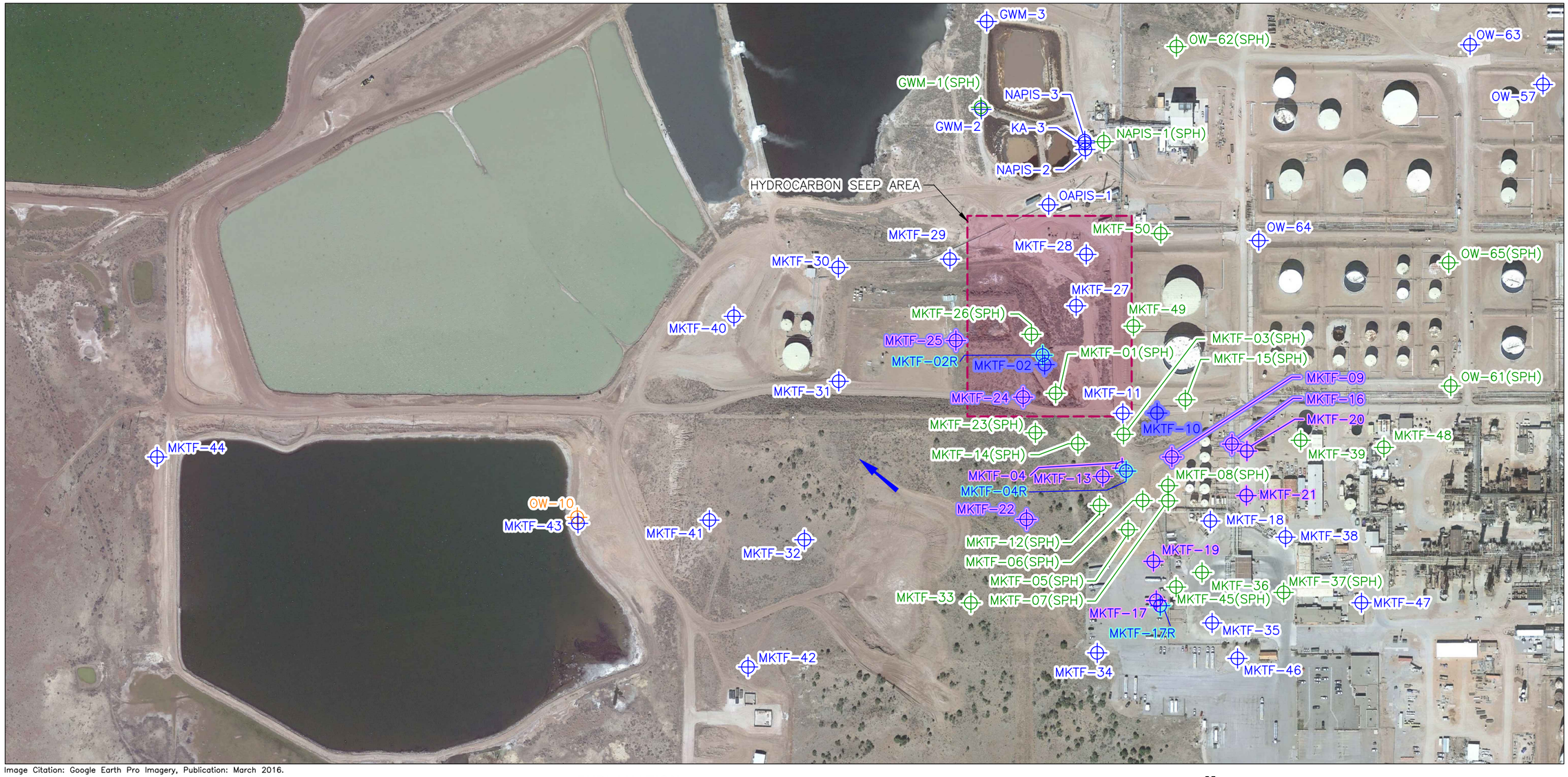


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NEW MEXICO

QUADRANGLE LOCATION

NOTE:

SITE LEGAL DESCRIPTION - TOWNSHIP 15 NORTH, RANGE 15 WEST, SECTION 33

EXPLANATION

OW-10	SONSELA WELL AND DESIGNATION
MKTF-42	CHINLE/ALLUVIUM INTERFACE WELL AND DESIGNATION
MKTF-45	SPH MONITORING WELL AND DESIGNATION
MKTF-17	MKTF MNA WELL
MKTF-04	MONITORING WELL WITH CONSISTENT DETECTION OF MTBE
MKTF-09	MONITORING WELL WITH CONSISTENT DETECTION OF CHLORINATED COMPOUNDS
MKTF-09	MONITORING WELL WITH CONSISTENT DETECTION OF MTBE AND CHLORINATED COMPOUNDS

	GENERAL GROUNDWATER FLOW DIRECTION
	HYDROCARBON SEEP AREA
CVOC	CHLORINATED VOLATILE ORGANIC COMPOUND
MKTF	MARKETING TANK FARM
MNA	MONITORED NATURAL ATTENUATION
MTBE	METHYL TERT-BUTYL ETHER
SPH	SEPARATE PHASE HYDROCARBON (DETECTED DURING THIRD QUARTER 2021 SAMPLING EVENT)

N

0 300'

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FIGURE 3-1

MNA WELLS WITH CVOC AND MTBE DETECTIONS

WESTERN REFINING SOUTHWEST LLC D/B/A MARATHON GALLUP REFINERY GALLUP, NEW MEXICO

Drawn By: REP	Checked By: MS	Scale: 1" = 300'	Date: 3/9/22	File: 697-MNA-SITE2-202111

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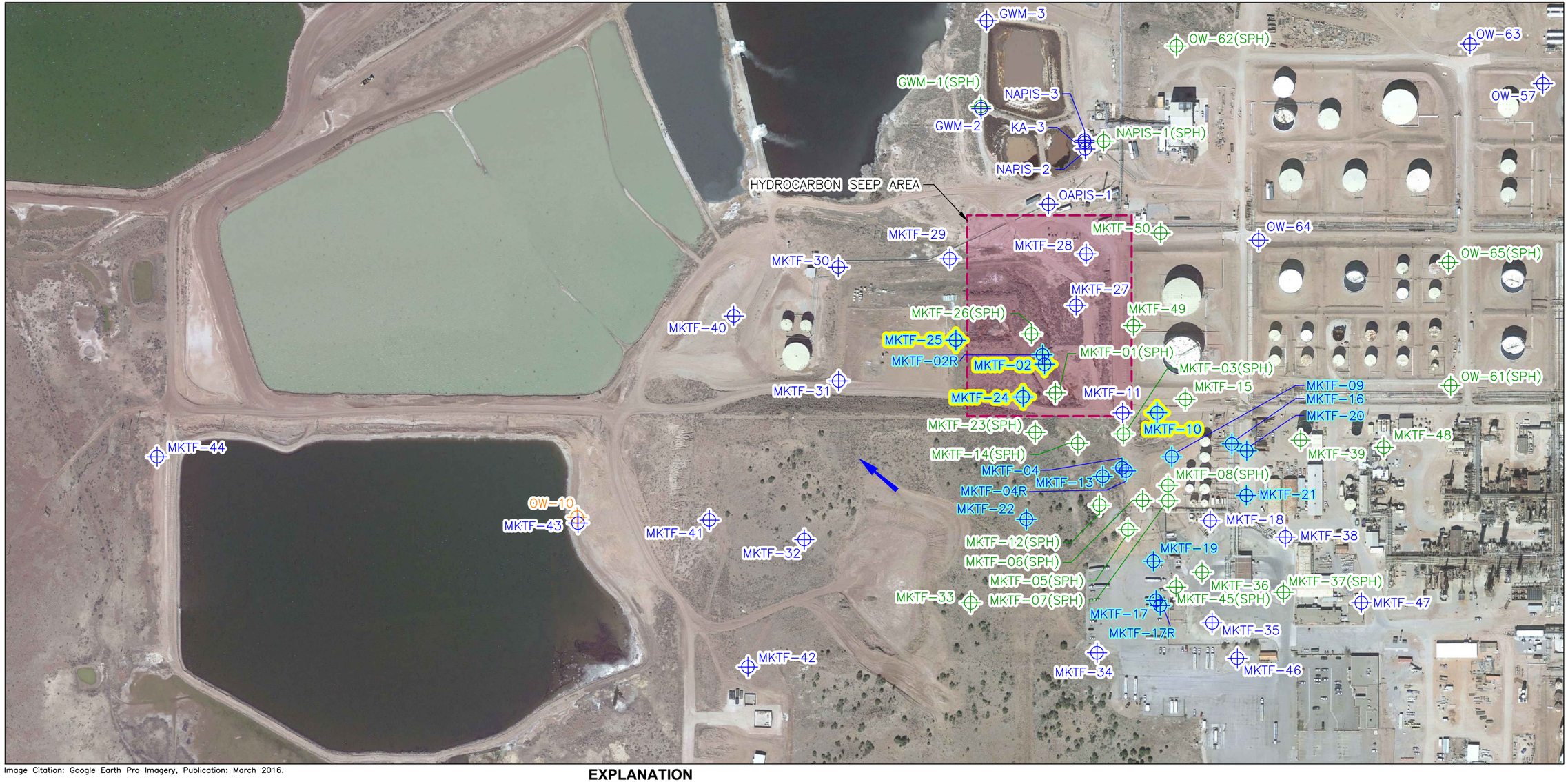


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EXPLANATION

OW-10	SONSELA WELL AND DESIGNATION
MKTF-42	CHINLE/ALLUVIUM INTERFACE WELL AND DESIGNATION
MKTF-45	SPH MONITORING WELL AND DESIGNATION
MKTF-17	MKTF MNA WELL
MKTF-10	MONITORING WELL WITH CONSISTENT DETECTION OF VINYL CHLORIDE
	GENERAL GROUNDWATER FLOW DIRECTION
	HYDROCARBON SEEP AREA

MKTF	MARKETING TANK FARM
MNA	MONITORED NATURAL ATTENUATION
SPH	SEPARATE PHASE HYDROCARBON (DETECTED DURING THIRD QUARTER 2021 SAMPLING EVENT)

NEW MEXICO

QUADRANGLE LOCATION

NOTE:

SITE LEGAL DESCRIPTION - TOWNSHIP 15 NORTH, RANGE 15 WEST, SECTION 33

N

0 300'

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FIGURE 3-2

MONITORING WELLS WITH CONSISTENT VINYL CHLORIDE CONCENTRATIONS (2018-2021)

WESTERN REFINING SOUTHWEST LLC D/B/A MARATHON GALLUP REFINERY GALLUP, NEW MEXICO

Drawn By: REP	Checked By: MS	Scale: 1" = 300'	Date: 3/9/22	File: 697-MNA-SITE1-202111

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Tables

TABLE 3-1. MONITORED NATURAL ATTENUATION MONITORING WELL CVOC/VOC ANALYTICAL AND FIELD DATA (2018-2021)
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Well ID	Date Sampled	PCE (mg/L)	TCE (mg/L)	cis-1,2-DCE (mg/L)	1,1-DCA (mg/L)	1,2-DCA (mg/L)	1,1-DCE (mg/L)	Vinyl Chloride (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	BTEX (mg/L)	TPH-GRO (mg/L)
MKTF-02R	12/16/2021	<0.001	0.015	0.0023	0.074	0.04	0.31	0.001	0.069	<0.001	<0.001	<0.0015	0.069	0.54
	09/17/2021	<0.005	0.023	0.0031	0.11	0.067	0.28	0.0019	0.029	<0.005	<0.005	<0.0075	0.029	0.56
	07/22/2021	<0.036	<0.036	<0.036	0.021	0.014	<0.036	<0.036	0.027	0.014	0.79	1.7	2.531	260
MKTF-02	06/17/2021	<0.01	<0.01	<0.01	0.014	0.0061	<0.01	0.015	1.5	0.025	0.34	0.063	1.928	5.2
	03/10/2021	<0.005	<0.005	<0.005	0.013	<0.005	<0.005	0.015	1.6	0.023	0.3	0.046	1.969	5.8
	12/18/2020	<0.005	<0.005	<0.005	0.0291	0.034	0.00876	0.0241	0.885	0.0119	0.161	<0.05	1.0579	--
	09/21/2020	<0.001	<0.001	0.0019	0.021	<0.001	0.0014	0.027	4	0.033	0.52	0.0063	4.5593	9.8
	02/25/2020	<0.005	<0.005	<0.005	0.0065	<0.005	<0.005	0.005	0.78	0.01	0.57	0.048	1.408	7.9
	11/19/2019	<0.005	<0.005	<0.005	0.019	0.0057	<0.005	0.022	0.36	<0.005	0.046	<0.0075	0.406	2.4
	08/23/2019	<0.02	<0.02	<0.02	0.027	<0.02	<0.02	0.028	0.99	<0.02	0.078	<0.03	1.068	3.9
	05/06/2019	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.95	<0.02	0.043	0.11	1.103	5.3
	03/28/2019	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.62	<0.02	<0.01	0.13	0.75	4.1
	11/28/2018	<0.01	<0.01	<0.01	0.044	<0.01	<0.01	0.028	5.5	0.082	0.51	0.17	6.262	18
	08/20/2018	<0.01	<0.01	<0.01	0.042	<0.01	0.024	<0.01	2.5	0.031	0.14	0.031	2.702	7.8
	05/01/2018	<0.01	0.0018	0.016	0.033	<0.01	0.011	<0.01	2.9	0.039	0.24	0.12	3.299	9.1
	02/06/2018	<0.005	<0.005	0.014	0.041	<0.005	0.018	<0.005	2.6	0.049	0.25	0.089	2.988	7.7
MKTF-04R	12/22/2021	<0.005	0.0033	0.026	0.054	0.0027	0.081	<0.005	0.19	0.0029	0.033	0.052	0.2779	2.1
	09/17/2021	<0.005	0.0021	0.018	0.035	0.0023	0.045	<0.005	1.1	0.013	0.2	0.25	1.563	5.2
	08/16/2021	<0.027	<0.027	<0.027	0.014	<0.027	0.014	<0.027	<0.014	0.0073	1.9	14	15.9073	300
MKTF-04	03/03/2020	<0.005	<0.005	<0.005	0.0091	<0.005	0.013	<0.005	0.8	0.01	0.47	0.56	1.84	8.2
	10/30/2019	<0.005	<0.005	<0.005	0.0055	<0.005	0.0073	<0.005	0.93	0.012	0.71	0.74	2.392	10
	08/21/2019	<0.005	<0.005	0.0091	0.013	0.0015	0.017	<0.005	0.82	0.012	0.63	0.7	2.162	10
	05/13/2019	<0.005	<0.005	<0.005	0.0054	<0.005	0.0081	<0.005	0.81	0.013	0.63	0.75	2.203	9.8
	03/26/2019	--	--	--	--	--	--	--	--	--	--	--	0	--
	11/20/2018	<0.002	<0.002	0.0071	0.011	<0.002	0.017	<0.002	1.1	0.011	0.61	0.65	2.371	7.6
	09/04/2018	<0.010	<0.010	<0.01	<0.01	<0.010	<0.010	<0.010	1.1	0.014	0.7	0.86	2.674	12
	05/02/2018	<0.010	<0.01	<0.01	0.014	<0.010	0.02	<0.010	1.1	0.016	0.74	0.89	2.746	12
	02/14/2018	<0.010	<0.010	0.011	<0.01	<0.010	0.012	<0.010	0.9	0.014	0.6	0.71	2.224	9.6
MKTF-09	09/20/2020	--	--	--	--	--	--	--	--	--	--	--	--	--
	03/03/2020	0.0012	<0.02	0.021	0.019	<0.02	0.035	<0.02	3.3	<0.02	0.2	0.059	3.559	7.9
	11/18/2019	<0.01	<0.01	0.011	0.011	<0.01	0.015	<0.01	3.7	0.014	0.23	0.069	4.013	10
	08/28/2019	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	3.5	0.021	0.27	0.098	3.889	12
	05/13/2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	3.2	0.025	0.28	0.095	3.6	8.4
	03/26/2019	--	--	--	--	--	--	--	--	--	--	--	0	--
	11/28/2018	<0.02	<0.02	0.02	0.022	<0.02	0.034	<0.02	3.3	<0.02	0.19	0.073	3.563	9.1
	09/04/2018	<0.02	<0.02	0.021	<0.02	<0.02	0.028	<0.02	2.7	<0.02	0.25	0.084	3.034	11
	05/02/2018	<0.01	<0.01	0.023	0.026	<0.01	0.036	<0.01	2.8	0.025	0.28	0.098	3.203	8.2
	02/14/2018	<0.01	<0.01	0.026	0.015	<0.01	0.028	<0.01	2.7	0.024	0.25	0.084	3.058	8.7
MKTF-10	12/16/2021	<0.01	<0.01	<0.01	0.017	<0.01	<0.01	0.012	6	0.2	1.7	6.7	14.6	37
	09/15/2021	<0.01	<0.01	<0.01	0.024	<0.01	<0.01	<0.01	3.7	0.25	1.1	4.3	9.35	48
	06/23/2021	<0.01	<0.01	0.011	0.018	<0.01	<0.01	0.012	5.8	0.59	1.9	8.4	16.69	45
	03/10/2021	<0.005	<0.005	0.013	0.027	<0.005	<0.005	0.01	5.1	0.28	1.5	7	13.88	40
	12/18/2020	<0.025	<0.025	<0.025	0.04	<0.025	<0.025	<0.025	4.67	0.284	1.8	8.6	15.354	--
	03/03/2020	<0.01	<0.01	0.041	0.047	<0.01	<0.01	<0.01	4.8	0.65	1.7	8.2	15.35	40
	10/30/2019	<0.01	<0.01	0.039	0.031	<0.01	<0.01	0.01	5.5	0.57	1.7	7.2	14.97	40
	08/22/2019	<0.01	<0.01	0.034	0.037	<0.01	<0.01	0.01	4.6	0.66	1.6	7.4	14.26	35
	05/13/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.5	0.9	1.7	7.9	16	48
	03/26/2019	--	--	--	--	--	--	--	--	--	--	--	0	--
	11/20/2018	<0.02	<0.02	0.058	<0.02	<0.02	<0.02	<0.02	11	1.9	1.9	8	22.8	53
	09/04/2018	<0.05	<0.05	0.047	<0.05	<0.05	<0.05	<0.05	10	2.4	1.8	8.1	22.3	57
	05/02/2018	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	13	4.9	2.1	9.6	29.6	100
	02/14/2018	<0.05	<0.05	0.066	<0.05	<0.05	<0.05	<0.05	10	3.7	1.8	8.3	23.8	74

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TABLE 3-1. MONITORED NATURAL ATTENUATION MONITORING WELL CVOC/VOC ANALYTICAL AND FIELD DATA (2018-2021)
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Well ID	Date Sampled	TPH-DRO (mg/L)	MTBE (mg/L)	Chloride (mg/L)	Fe, Dissolved (mg/L)	Fe, Total (mg/L)	Mn, Dissolved (mg/L)	Mn, Total (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	DO (mg/L)	ORP (mV)	pH	T (C)
MKTF-02R	12/16/2021	0.19	0.035	1900	0.029	0.71	0.21	0.23	0.071	660	0.59	215.6	7.46	10.6
	09/17/2021	0.22	0.045	1800	<0.02	0.047	0.087	0.095	<0.5	710	5.7	110.1	7.04	14.1
	07/22/2021	41	<0.036	--	--	22000	--	950	--	--	--	--	--	--
MKTF-02	06/17/2021	1.8	0.034	3000	1	2.1	5.4	5.6	<0.5	100	3.98	171.8	7.01	14.9
	03/10/2021	1.4	0.026	2900	1.8	3.1	6.8	6.7	<0.5	190	1.93	273.7	6.95	9.63
	12/18/2020	4.55	0.0317	3020	1.03	2.56	6.46	6.14	<0.1	185	7.24	171.7	6.94	11.5
	09/21/2020	2.1	0.061	1000	0.22	0.99	1.9	2	<0.5	64	0.21	285.1	6.72	14.76
	02/25/2020	1.8	0.0091	1300	0.34	2	3	3	<0.5	160	5.77	127.3	8.69	8.13
	11/19/2019	0.65	0.025	--	--	5.9	--	2.9	--	--	3.52	145	7.6	14.3
	08/23/2019	3.1	0.051	2000	2.4	9.1	2	2.3	<0.5	150	3.01	-104.1	7.1	13.35
	05/06/2019	3.5	0.049	1600	3	3.9	1.8	1.9	<0.5	61	1.74	-92.2	6.9	12.31
	03/28/2019	3.8	0.047	1400	0.42	1.6	1.6	1.5	--	52	1.92	46.1	8.3	11.18
	11/28/2018	2.9	0.099	570	0.078	0.24	0.75	0.74	<0.5	5.6	--	--	7.7	12.95
	08/20/2018	1.3	0.1	510	0.027	0.2	0.51	0.52	<0.5	11	--	--	7.2	14.8
	05/01/2018	3.2	0.097	520	0.03	0.36	0.57	0.62	<0.5	15	--	--	7.5	11.8
	02/06/2018	2.8	0.11	520	0.022	0.57	0.55	0.61	--	20	--	--	8.4	10.26
MKTF-04R	12/22/2021	1.2	0.86	240	0.49	2.7	2.6	2.6	0.066	93	2.12	125	6.90	13.8
	09/17/2021	2.2	1.6	220	1.5	9.3	2.4	2.7	<0.5	63	1.96	-25.8	6.84	16.1
	08/16/2021	130	0.063	--	--	15000	--	770	--	--	--	--	--	--
MKTF-04	03/03/2020	1.8	2.1	220	1.4	6	1.8	1.9	<0.5	9.3	2.02	30.1	8.39	12.89
	10/30/2019	0.77	1.8	210	5.4	7.6	1.5	1.6	<0.5	3.4	--	--	--	--
	08/21/2019	5.9	1.7	230	1.5	5.9	2	2.2	<0.5	16	--	--	--	--
	05/13/2019	5.6	1.8	260	4.5	8	1.6	1.6	<0.5	5.6	--	--	--	--
	03/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/20/2018	4.5	2.2	210	1	5.1	1.5	2.3	<0.5	9.6	--	--	--	--
	09/04/2018	4.7	1.8	200	3.2	5.7	1.5	1.4	<0.5	5.5	--	--	--	--
	05/02/2018	4.9	2.3	200	2.4	5.3	1.5	1.7	<0.5	9.8	--	--	--	--
	02/14/2018	5	2.0	220	1.9	5.2	1.5	1.5	<0.5	8.6	--	--	--	--
MKTF-09	09/20/2020	--	--	--	--	--	--	--	--	--	1.7	210.5	7.07	16.89
	03/03/2020	1	0.53	290	1.4	2.7	4.1	4	<0.5	46	1.91	51.2	8.04	11.22
	11/18/2019	1.0	0.45	220	2.4	3.4	4.2	4.3	<0.5	25	1.46	29.8	7.41	16.1
	08/28/2019	3.9	0.42	230	3.8	4.5	4.4	4.5	<0.5	12	--	--	6.87	14.84
	05/13/2019	3.1	0.31	250	3.2	3.8	4.6	4.8	<0.5	8.1	2.41	-74.3	6.52	14.27
	03/26/2019	--	--	--	--	--	--	--	--	--	1.58	-59.9	7.90	12.1
	11/28/2018	1.8	0.56	260	0.82	1.9	4.1	3.9	<0.5	24	--	--	7.29	13.85
	09/04/2018	2.4	0.43	260	0.94	1.8	4.4	4.2	<0.5	17	--	--	--	--
	05/02/2018	2.6	0.49	250	1.4	2.3	3.9	4.4	<0.5	22	--	--	--	--
	02/14/2018	2.2	0.48	220	1.3	2.3	4	3.9	<0.5	27	--	--	6.93	11.30
MKTF-10	12/16/2021	2.3	<0.01	870	7.7	11	4.6	4.9	<0.5	<2.5	2.82	56.5	6.91	12.9
	09/15/2021	1.8	<0.01	970	8	12	5	5.2	<0.5	<2.5	1.08	-2.3	6.68	19.3
	06/23/2021	2.1	0.012	1000	9.7	9.5	5.9	5.7	<0.5	<2.5	1.08	23.1	6.75	15.9
	03/10/2021	1.4	0.009	930	9.3	12	5.3	5.5	<0.5	<2.5	2.43	274.3	6.90	9.48
	12/18/2020	5.54	<0.025	937	7.25	10.7	4.81	5.07	<0.1	<1	2.87	220.4	6.92	11.2
	03/03/2020	1.3	<0.01	970	7.2	12	5.4	5.5	<0.5	<2.5	1.61	3	7.83	11.84
	10/30/2019	<0.40	0.017	1000	14	15	6.2	6.3	<0.5	<2.5	1.4	-1.2	7.18	13.6
	08/22/2019	3	0.019	960	7.9	11	5.4	5.6	<0.5	<2.5	--	--	7.04	18.34
	05/13/2019	3.5	<0.05	460	8.4	8.9	3.4	3.6	<0.5	<2.5	1.78	-87.1	6.24	15.95
	03/26/2019	--	--	--	--	--	--	--	--	--	1.16	-24.4	7.85	11.9
	11/20/2018	2.8	<0.02	320	6.1	8.3	2.9	3	<0.5	<2.5	--	--	7.26	12.68
	09/04/2018	2.5	<0.05	340	6.8	7.7	2.9	2.8	<0.5	<2.5	--	--	--	--
	05/02/2018	3.7	<0.05	380	9.2	11	3.3	3.9	<0.5	<2.5	--	--	--	--
	02/14/2018	2.6	<0.05	390	9.7	12	3.7	3.6	<0.5	<2.5	--	--	--	--

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TABLE 3-1. MONITORED NATURAL ATTENUATION MONITORING WELL CVOC/VOC ANALYTICAL AND FIELD DATA (2018-2021)
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Well ID	Date Sampled	PCE (mg/L)	TCE (mg/L)	cis-1,2-DCE (mg/L)	1,1-DCA (mg/L)	1,2-DCA (mg/L)	1,1-DCE (mg/L)	Vinyl Chloride (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	BTEX (mg/L)	TPH-GRO (mg/L)
MKTF-13	10/29/2019	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	4.7	0.11	0.6	2.6	8.01	23
	08/20/2019	--	--	--	--	--	--	--	--	--	--	--	--	--
	05/09/2019	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	3.2	0.12	0.32	2.6	6.24	19
	03/26/2019	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	3.5	0.14	0.6	3.5	7.74	27
	11/28/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	4.5	0.13	0.53	2.8	7.96	24
	08/30/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	3.5	0.12	0.65	3.2	7.47	26
	05/10/2018	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	4.8	0.15	0.87	4	9.82	28
MKTF-16	12/28/2021	<0.001	<0.001	<0.001	0.0026	<0.001	<0.001	<0.001	0.016	<0.001	0.0036	<0.0015	0.0196	0.061
	09/24/2021	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	4.8	<0.05	0.43	<0.075	5.23	13
	03/11/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	4.5	<0.1	0.55	0.16	5.21	17
	12/28/2020	--	--	--	--	--	--	--	--	--	--	--	0	--
	12/23/2020	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	14.7	0.129	1.32	<1	16.149	--
	10/30/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	15	<0.1	1.5	0.43	16.93	33
	08/30/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	9.8	<0.1	0.48	<0.15	10.28	20
	05/14/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	14	0.11	0.71	0.62	15.44	30
	02/20/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	21	0.19	1.4	1.6	24.19	48
	11/29/2018	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	0.12	0.89	0.72	18.73	34
	08/31/2018	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	17	0.13	1.3	1.4	19.83	50
	05/11/2018	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	19	0.17	1.6	2	22.77	47
	02/15/2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.8	0.024	0.015	0.23	2.069	8.4
MKTF-17R	12/21/2021	<0.01	<0.01	<0.01	0.0059	<0.01	<0.01	<0.01	1.6	5.8	0.49	2.4	10.29	28
	09/17/2021	<0.005	<0.005	<0.005	0.0033	<0.005	<0.005	<0.005	1.6	5.4	0.28	2.7	9.98	29
	08/14/2021	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	11	150	17	92	270	2100
MKTF-17	10/29/2019	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	12	23	1.1	3.1	39.2	78
	08/20/2019	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.87	<0.005	0.64	0.078	1.588	7.6
	05/09/2019	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	2.2	<0.005	0.49	0.15	2.84	9.1
	03/26/2019	--	--	--	--	--	--	--	--	--	--	--	0	--
	11/28/2018	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.028	<0.0075	0.028	3
	08/24/2018	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.12	<0.0075	0.12	4.7
	05/04/2018	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.047	<0.005	0.14	<0.0075	0.187	7.1
	02/16/2018	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.22	<0.005	0.21	<0.0075	0.43	3.7
MKTF-19	10/29/2019	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.6	0.013	0.61	0.61	2.833	17
	08/19/2019	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.4	<0.02	0.72	0.71	2.83	19
	05/09/2019	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.8	<0.02	0.77	0.61	3.18	19
	03/26/2019	--	--	--	--	--	--	--	--	--	--	--	0	--
	11/28/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.9	<0.02	0.63	0.57	3.1	15
	08/24/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.7	<0.02	0.71	0.74	3.15	22
	05/04/2018	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	2	0.0057	0.87	0.82	3.6957	23
	02/16/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.9	<0.02	0.74	0.64	3.28	16
MKTF-20	02/05/2020	<0.010	<0.010	<0.010	<0.010	<0.005	<0.010	<0.010	0.62	<0.010	0.058	0.53	1.208	4.6
	11/05/2009	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	2.4	<0.010	0.26	0.096	2.756	7
	08/21/2019	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	4.8	<0.010	1.1	3.7	9.6	28
	05/14/2019	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	2.3	<0.010	1.0	3.5	6.8	25
	02/20/2019	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	2.1	<0.010	0.23	0.14	2.47	7.3
	11/29/2018	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	3	0.02	0.12	2.5	5.64	17
	08/31/2019	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	9.9	<0.100	0.77	9.1	19.77	70
	05/11/2018	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	13	0.14	1.3	13	27.44	76
	02/15/2018	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	12	0.19	0.96	12	25.15	79
MKTF-21	03/11/2021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.018	<0.002	0.0063	0.0043	0.0286	1.8
	02/05/2020	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.058	<0.005	<0.005	<0.0075	0.058	0.74
	11/05/2019	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	5.6	<0.02	1.1	2.8	9.5	27
	08/22/2019	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	5.4	<0.020	0.68	0.5	6.58	17
	05/14/2019	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	2.4	<0.020	0.28	0.22	2.9	8.5
	02/20/2019	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	2	<0.020	1.2	7.1	10.3	40
	11/29/2018	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	2	<0.020	0.11	0.14	2.25	7.2
	08/31/2018	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	5.9	<0.020	0.8	0.99	7.69	22
	05/11/2018	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	4.8	<0.010	0.47	0.67	5.94	17
	02/15/2018	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	3.4	<0.020	0.31	0.39	4.1	12

TABLE 3-1. MONITORED NATURAL ATTENUATION MONITORING WELL CVOC/VOC ANALYTICAL AND FIELD DATA (2018-2021)
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Well ID	Date Sampled	TPH-DRO (mg/L)	MTBE (mg/L)	Chloride (mg/L)	Fe, Dissolved (mg/L)	Fe, Total (mg/L)	Mn, Dissolved (mg/L)	Mn, Total (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	DO (mg/L)	ORP (mV)	pH	T (C)
MKTF-13	10/29/2019	7.3	0.33	290	15	20	4.6	4.7	<0.5	0.59	0.85	-8.4	7.24	13.8
	08/20/2019	--	--	--	--	--	--	--	--	--	--	--	--	--
	05/09/2019	63	0.48	400	25	35	5.3	6.1	<0.5	1.1	--	--	--	--
	03/26/2019	8.1	0.44	390	24	25	5.1	4.7	--	0.75	--	--	--	--
	11/28/2018	4.5	1.4	220	10	16	4.4	4.4	<0.5	<2.5	--	--	7.11	14.17
	08/30/2018	5.5	1.2	210	16	19	5.1	4.7	<0.5	<2.5	--	--	--	--
	05/10/2018	30	2	190	14	17	4.6	4.6	<0.5	1.2	--	--	--	--
MKTF-16	12/28/2021	0.35	0.004	83	0.039	2	0.012	0.055	0.86	46	7.93	304.2	6.75	8.5
	09/24/2021	<1.7	0.17	260	3.1	6.5	1.1	1.1	--	12	0.7	-55.9	6.80	18.9
	03/11/2021	--	0.16	--	--	--	--	--	--	--	1.11	61.6	6.82	12.2
	12/28/2020	--	--	--	--	12.4	--	2.68	--	--	--	--	--	--
	12/23/2020	--	0.279	--	--	10.7	--	2.54	--	--	0.98	53.8	6.97	14.2
	10/30/2019	<0.4	0.62	1700	15	17	5.5	4.9	<0.5	<2.5	--	--	--	--
	08/30/2019	3.6	0.55	1800	21	24	7.1	6.8	<0.5	<2.5	--	--	6.79	22.88
	05/14/2019	3.4	0.62	960	5.8	5.8	2.6	3	<0.5	<2.5	0.97	-78	6.16	15.96
	02/20/2019	2.2	0.61	590	2	5.8	1.7	1.7	<0.5	<2.5	2.1	-55.1	7.71	13.47
	11/29/2018	2.6	0.69	620	2.7	4.1	1.5	1.5	<0.5	<2.5	--	--	--	--
	08/31/2018	3.3	0.64	650	1.8	3.6	1.8	1.7	--	<2.5	--	--	6.91	23.9
	05/11/2018	2.9	0.64	840	3.4	4.3	1.9	1.9	<0.5	<2.5	--	--	7.03	18.6
	02/15/2018	2.4	0.04	760	0.095	18	0.37	0.8	<0.5	57	--	--	6.89	15.24
MKTF-17R	12/21/2021	1.9	4.4	190	0.21	0.99	3.5	3.4	<0.5	4.9	6.7	197.5	7.05	13.6
	09/17/2021	1.8	3.9	170	0.16	1.4	2.8	3.4	<0.5	10	1.89	132.2	6.96	16.6
	08/14/2021	200	0.088	--	--	19000	--	880	--	--	--	--	--	--
MKTF-17	10/29/2019	0.7	2.5	240	0.45	4.8	3.5	3.4	<0.5	6.2	2.27	169.9	7.49	14.0
	08/20/2019	3.3	4.3	140	0.37	3	2.8	3	<0.5	14	--	--	6.99	15.03
	05/09/2019	7.6	4.3	100	0.27	5.4	3	3.1	<0.5	15	1	-93.8	6.36	11.94
	03/26/2019	--	--	--	--	--	--	--	--	--	3.75	2.7	7.72	10.99
	11/28/2018	1.6	5.7	110	0.27	2	2.5	2.2	<0.5	120	--	--	7.62	13.56
	08/24/2018	<1.0	5.3	110	0.39	1.7	2.4	2.4	<0.5	160	--	--	7.31	17.3
	05/04/2018	1.4	7.4	130	0.17	1.8	2.7	2.8	<0.1	68	--	--	7.14	13.8
	02/16/2018	1.3	4.9	100	0.13	1.7	2.9	2.6	<0.5	52	--	--	7.00	13.00
MKTF-19	10/29/2019	1	7.9	130	10	15	2.4	2.4	<0.5	<2.5	1.1	13.9	7.28	14.5
	08/19/2019	13	8.3	140	11	21	2.3	2.8	<0.5	<2.5	--	--	6.89	14.10
	05/09/2019	11	7.8	140	11	15	2.4	2.7	<0.5	<2.5	--	--	--	--
	03/26/2019	--	--	--	--	--	--	--	--	--	0.98	-58	7.34	8.91
	11/28/2018	7.8	10	140	8.3	7.5	2.2	2.4	<0.5	<2.5	--	--	7.14	13.7
	08/24/2018	7.9	9.7	120	10	15	2.3	2.4	<0.5	<2.5	--	--	--	--
	05/04/2018	9.3	11	130	10	11	2.4	2.4	<0.5	<2.5	--	--	--	--
	02/16/2018	11	10	120	9.6	10	2.4	2.3	<0.5	<2.5	--	--	--	--
MKTF-20	02/05/2020	1	<0.010	--	--	--	--	--	--	--	--	--	--	--
	11/05/2009	1.5	0.17	140	2.2	4.3	2.1	2	<0.5	<2.5	--	--	--	--
	08/21/2019	5.1	0.035	3300	20	19	8.1	7.5	<0.5	2.8	--	--	--	--
	05/14/2019	5.4	0.032	3400	22	25	9	8.5	<0.5	36	--	--	--	--
	02/20/2019	9.8	0.22	760	47	58	5.5	5.5	<0.5	11	--	--	--	--
	11/29/2018	6.9	0.026	460	2.5	8	2.5	2.6	<0.5	4.3	--	--	--	--
	08/31/2019	11	<0.100	560	5.3	5.8	2.8	3	<0.5	8.4	--	--	--	--
	05/11/2018	9.7	0.13	1600	17	16	5.4	5.5	<0.5	18	--	--	--	--
	02/15/2018	5.1	<0.100	3100	53	52	17	16	<0.5	15	--	--	--	--
MKTF-21	03/11/2021	--	0.03	150	--	170	--	2.1	<0.5	110	1.3	31.5	7.11	11.7
	02/05/2020	<0.400	0.05	--	--	--	--	--	--	--	--	--	--	--
	11/05/2019	2.7	0.029	2300	8.3	9	6.2	5.8	<0.5	19	--	--	--	--
	08/22/2019	7.4	0.29	230	16	21	3.4	3.3	<0.5	6.2	--	--	--	--
	05/14/2019	9.4	0.29	540	33	42	5.6	5.7	<0.5	6.9	--	--	--	--
	02/20/2019	20	<0.020	4600	57	63	14	15	<0.5	880	--	--	--	--
	11/29/2018	3.8	0.22	340	9.3	29	3.6	4.1	<0.5	8.6	--	--	--	--
	08/31/2018	2.9	0.5	330	16	18	3.6	3.7	<0.5	7.1	--	--	--	--
	05/11/2018	3.6	0.52	190	31	43	5.8	5.9	<0.5	4.3	--	--	--	--
	02/15/2018	3.2	0.39	210	9.2	20	5.2	5	<0.5	23	--	--	--	--

TABLE 3-1. MONITORED NATURAL ATTENUATION MONITORING WELL CVOC/VOC ANALYTICAL AND FIELD DATA (2018-2021)
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Well ID	Date Sampled	PCE (mg/L)	TCE (mg/L)	cis-1,2-DCE (mg/L)	1,1-DCA (mg/L)	1,2-DCA (mg/L)	1,1-DCE (mg/L)	Vinyl Chloride (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	BTEX (mg/L)	TPH-GRO (mg/L)
MKTF-22	10/24/2019	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	3.4	<0.02	0.27	<0.03	3.67	9
	08/20/2019	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	3.2	<0.02	0.26	<0.03	3.46	8.2
	05/09/2019	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	3.5	<0.02	0.33	<0.03	3.83	11
	03/26/2019	--	--	--	--	--	--	--	--	--	--	--	0	--
	11/28/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	3	<0.02	0.17	<0.03	3.17	11
	08/30/2018	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	2.2	<0.02	0.12	<0.03	2.32	11
	05/10/2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	2.5	<0.01	0.15	<0.015	2.65	11
	02/08/2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	2.3	<0.01	0.14	0.018	2.458	10
MKTF-24	12/16/21	<0.01	<0.01	<0.01	0.02	0.0054	<0.01	0.036	5.4	0.018	0.28	<0.015	5.698	12
	09/21/21	<0.01	<0.01	<0.01	0.03	<0.005	<0.01	0.03	6.4	0.027	0.26	<0.015	6.687	18
	06/16/21	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.035	5.7	0.022	0.17	<0.015	5.892	1.4
	03/09/21	<0.01	<0.01	<0.01	0.021	<0.01	<0.01	0.031	4.9	0.02	0.18	<0.015	5.1	15
	12/18/20	<0.025	<0.025	<0.025	0.0393	0.163	<0.025	0.0332	5.02	<0.025	0.223	<0.25	5.243	--
	09/19/20	<0.02	<0.02	<0.02	0.041	<0.02	<0.02	0.037	6.1	0.024	0.24	<0.03	6.364	15
	02/25/20	<0.02	<0.02	<0.02	0.038	<0.02	0.02	0.028	2.9	<0.02	0.083	<0.03	2.983	7.2
	10/23/2019	<0.02	<0.02	<0.02	0.033	<0.02	<0.02	0.037	5	0.024	0.31	<0.03	5.334	17
	08/23/2019	<0.02	<0.02	<0.02	0.053	<0.02	<0.02	0.038	4.1	0.022	0.24	<0.03	4.362	15
	05/06/2019	<0.02	<0.02	<0.02	0.047	<0.02	<0.02	0.022	3	<0.02	0.12	<0.03	3.12	8.6
	02/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/15/2018	<0.02	<0.02	<0.02	0.076	<0.02	<0.02	0.028	4.8	0.021	0.2	<0.03	5.021	16
	10/10/2018	<0.001	0.0023	0.014	0.08	0.0056	0.029	0.012	2.5	0.014	0.038	0.0048	2.5568	--
	08/20/2018	<0.02	<0.02	<0.02	0.074	<0.02	0.022	0.032	4.8	0.025	0.32	<0.03	5.145	23
	05/01/2018	<0.02	<0.02	0.022	0.066	<0.02	<0.02	0.031	5.5	0.029	0.3	<0.03	5.829	23
	02/06/2018	<0.02	<0.02	<0.02	0.082	<0.02	0.027	0.037	6.3	0.03	0.41	<0.03	6.74	21
MKTF-25	12/17/21	<0.01	0.011	0.018	0.095	0.012	0.055	0.014	0.7	<0.01	<0.01	<0.015	0.7	3.3
	09/21/21	<0.01	0.011	0.021	0.11	0.013	0.059	<0.01	0.76	<0.01	<0.01	<0.015	0.76	2.9
	06/17/21	<0.01	0.01	0.016	0.09	0.012	0.068	0.011	0.89	<0.01	<0.01	<0.015	0.89	4.4
	03/05/21	<0.01	<0.01	0.018	0.078	0.011	0.058	<0.01	0.76	<0.01	<0.01	<0.015	0.76	4.1
	12/18/20	<0.005	0.0097	0.0149	0.0918	0.0321	0.0613	<0.005	0.629	<0.005	<0.005	<0.05	0.629	--
	09/19/20	--	--	--	--	--	--	--	--	--	--	--	--	--
	02/27/20	<0.005	0.012	0.027	0.1	0.0088	0.063	<0.005	0.42	<0.005	<0.005	<0.0075	0.42	2.5
	11/18/19	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/23/2019	<0.005	0.011	0.027	0.11	0.0091	0.059	<0.005	0.37	<0.005	<0.005	<0.0075	0.37	3
	08/27/2019	<0.005	0.013	0.025	0.13	0.01	0.052	<0.005	0.13	<0.005	<0.005	<0.0075	0.13	1.7
	05/06/2019	<0.01	0.012	0.035	0.14	<0.01	0.05	<0.01	0.37	<0.01	<0.01	<0.015	0.37	3.6
	02/14/2019	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/15/2018	<0.01	<0.01	0.029	0.13	<0.01	0.027	<0.01	1.7	<0.01	<0.01	<0.015	1.7	5
	08/17/2018	<0.01	<0.01	0.052	0.14	<0.01	0.049	<0.01	4.5	0.017	0.026	<0.015	4.543	17
	05/06/2018	<0.05	0.026	0.053	0.23	<0.005	0.11	<0.005	3.4	0.015	0.15	0.009	3.574	12
	02/05/2018	<0.05	0.025	0.05	0.22	0.01	0.11	<0.005	2	0.01	0.11	0.0097	2.1297	16

Notes:
-- = not sampled/measured
< = less than
BTEX = benzene, toluene, ethylbenzene, xylene
C = centigrade
DCA = dichloroethane
DCE = dichloroethene
DO = dissolved oxygen
Fe = iron
ID = identification
mg/L = milligrams per liter
Mn = manganese
MNA = monitored natural attenuation
MTBE = methyl tert-butyl ether
mV = millivolts
ORP = oxidation reduction potential measured using a silver/silver chloride reference cell
PCE = tetrachloroethene
T = temperature
TCE = trichloroethene
TPH-DRO = total petroleum hydrocarbons - diesel range organics
TPH-GRO = total petroleum hydrocarbons - gasoline range organics

pH, ORP, and temperature were measured during well purging prior to the sampling date

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TABLE 3-1. MONITORED NATURAL ATTENUATION MONITORING WELL CVOC/VOC ANALYTICAL AND FIELD DATA (2018-2021)
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Well ID	Date Sampled	TPH-DRO (mg/L)	MTBE (mg/L)	Chloride (mg/L)	Fe, Dissolved (mg/L)	Fe, Total (mg/L)	Mn, Dissolved (mg/L)	Mn, Total (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	DO (mg/L)	ORP (mV)	pH	T (C)
MKTF-22	10/24/2019	<0.4	2.6	190	6.8	12	2.9	2.9	<0.5	2.9	1.88	39.9	7.34	12.6
	08/20/2019	2.4	2.7	200	6.8	8.5	2.6	2.9	<0.5	4.7	--	--	7.04	12.40
	05/09/2019	2.6	3.3	170	7.3	11	2.6	3.1	<0.5	13	2.07	-81.4	6.39	12.45
	03/26/2019	--	--	--	--	--	--	--	--	--	1.89	-32	7.48	11.27
	11/28/2018	2	6	130	1.4	12	2.5	2.5	<0.5	5.8	--	--	6.97	12.75
	08/30/2018	3.1	5.4	110	3	7.4	2.4	2.5	1.7	3.8	--	--	7.05	14.4
	05/10/2018	3.5	5.9	110	1.4	4.4	2.4	2.5	0.15	5.8	--	--	7.19	13.8
	02/08/2018	2.9	5.7	110	1	8.3	2.2	2.5	--	5.2	--	--	5.29	12.62
MKTF-24	12/16/21	0.67	0.081	1300	0.64	0.77	4.4	4.7	0.17	13	0.5	241.6	6.93	11.4
	09/21/21	0.65	0.1	1100	0.39	0.67	3.7	4	<0.5	13	2.09	143.6	6.86	13.8
	06/16/21	0.69	0.097	1000	0.3	3.2	3.3	3.5	<0.5	16	3.67	154.9	7.00	13.9
	03/09/21	0.48	0.11	960	0.18	1.8	3.4	3.4	<0.5	15	6.5	242.5	7.06	10.5
	12/18/20	2.47	0.0989	893	0.248	7.25	2.39	2.84	<0.1	21.8	6.25	211.5	7.01	10.8
	09/19/20	0.38	0.12	950	0.26	32	1.9	4.4	--	35	2.65	238.9	7.55	12.35
	02/25/20	0.71	0.11	940	0.08	1.9	1.9	2.2	<0.5	27	1.52	81	9.45	12.87
	10/23/2019	<0.4	0.11	660	0.59	0.9	2.4	2.3	<0.5	20	2.27	189.4	7.44	13.0
	08/23/2019	<1	0.11	800	1.6	5.3	2.2	2.1	<0.5	34	--	--	7.28	14.0
	05/06/2019	<1	0.11	1000	5.7	8.3	2.3	2.6	<0.5	42	2.12	-81.9	6.67	14.32
	02/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/15/2018	1.5	0.12	520	0.1	0.7	1.8	2	<0.5	27	--	--	7.30	12.68
	10/10/2018	--	0.12	810	--	--	--	--	<0.5	52				
	08/20/2018	1.4	0.12	560	0.33	1.2	1.8	1.8	<0.5	30	--	--	7.10	12.9
	05/01/2018	1.4	0.13	500	0.26	1.3	1.9	2.1	0.17	29	--	--	7.09	12.3
	02/06/2018	1.1	0.17	430	0.24	0.78	2.2	2.2	--	30	--	--	8.30	12.43
MKTF-25	12/17/21	0.6	0.5	770	0.033	1.9	2.7	2.8	--	62	2.96	268.4	7.09	12.3
	09/21/21	0.63	0.66	800	0.027	0.96	2.7	3	<0.5	67	3.17	196.5	7.05	14.4
	06/17/21	0.54	0.64	760	0.095	1.8	2.8	2.7	<0.5	64	2.48	185	7.17	15.7
	03/05/21	0.32	0.98	820	0.14	2.3	2.7	2.8	<0.5	67	2.16	292.4	6.96	10.36
	12/18/20	1.86	0.795	844	<0.2	4.07	2.98	3.2	<0.1	68	4.8	165	7.05	11.9
	09/19/20	--	--	--	--	--	--	--	--	--	11.68	86.3	5.51	14.01
	02/27/20	<0.4	0.62	980	0.13	5.6	3.2	3.4	--	76	6.28	91.5	8.39	9.86
	11/18/19	--	--	--	--	--	--	--	<0.1	--	--	--	--	--
	10/23/2019	<0.4	0.88	1400	0.28	10	5.4	5.8	<0.5	73	2.66	179.1	7.26	12.8
	08/27/2019	<1.0	0.85	1100	0.25	1.8	3.6	3.9	<0.5	68	--	--	6.77	14.93
	05/06/2019	<1.0	0.29	860	0.21	4.7	1.8	2.2	<0.5	52	1.6	50.1	6.59	10.81
	02/14/2019	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/15/2018	<1.0	0.2	630	0.048	2.9	2.9	3.1	<0.5	50	--	--	7.27	12.28
	08/17/2018	1	0.25	540	0.97	12	2.4	3	<0.5	23	--	--	7.10	14.5
	05/06/2018	1.1	0.26	500	0.75	2.6	2.4	2.7	--	28	--	--	7.10	10.5
	02/05/2018	<1.0	0.25	520	0.7	4.3	2.6	3.2	--	27	--	--	6.86	10.70

Notes:
-- = not sampled/measured
< = less than
BTEX = benzene, toluene, ethylbenzene, xylene
C = centigrade
DCA = dichloroethane
DCE = dichloroethene
DO = dissolved oxygen
Fe = iron
ID = identification
mg/L = milligrams per liter
Mn = manganese
MNA = monitored natural attenuation
MTBE = methyl tert-butyl ether
mV = millivolts
ORP = oxidation reduction potential measured using a silver/silver chloride reference cell
PCE = tetrachloroethene
T = temperature
TCE = trichloroethene
TPH-DRO = total petroleum hydrocarbons - diesel range organics
TPH-GRO = total petroleum hydrocarbons - gasoline range organics

pH, ORP, and temperature were measured during well purging prior to the sampling date

TABLE 3-2. MONITORED NATURAL ATTENUATION ASSESSMENT USEPA SCORING SYSTEM
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Analysis	Concentration in Most Contaminated Zone	Significance	Applicability to the Existing Data Set	Scoring Value
Oxygen	<0.5 mg/L	Tolerated, suppresses the reductive pathway at higher concentrations	DO data collected in a bucket during well purging. Not as accurate as a flow-through cell	3
Oxygen	>5 mg/L	Not tolerated; however, VC may be oxidized aerobically	DO data collected in a bucket during well purging. Not as accurate as a flow-through cell	-3
Nitrate	<1 mg/L	At higher concentrations may compete with reductive pathway	In data set	2
Iron II	>1 mg/L	Reductive pathway possible; VC may be oxidized under Fe(III)-reducing conditions	Ferrous iron not sampled for; dissolved (field filtered) is used	3
Sulfate	<20 mg/L	At higher concentrations may compete with reductive pathway	In data set	2
Sulfide	>1 mg/L	Reductive pathway possible	Not currently analyzed	3
Methane	<0.5 mg/L	VC oxidizes	Not currently analyzed	0
	>0.5 mg/L	Ultimate reductive daughter product, VC accumulates	Not currently analyzed	3
ORP	<50 mV	Reductive pathway possible	ORP data collected in a bucket during well purging. Not as accurate as a flow-through cell	1
	<-100mV	Reductive pathway likely	ORP data collected in a bucket during well purging. Not as accurate as a flow-through cell	2
pH	5 < pH < 9	Optimal range for reductive pathway	In data set	0
	5 > pH >9	Outside optimal range for reductive pathway	In data set	-2
TOC	> 20 mg/L	Carbon and energy source; drives dechlorination; can be natural or anthropogenic	Not currently analyzed; inferred from total BTEX and TPH	2
Temperature	> 20 C	At T >20 C biochemical process is accelerated	In data set	1
CO_2	>2x background	Ultimate oxidative daughter product	Not currently analyzed	1
Alkalinity	>2x background	Results from interaction between CO_2 and aquifer minerals	Not currently analyzed	1
Chloride	>2x background	Daughter product of organic chlorine	In data set, but very high background in shallow water at the refinery due to other releases	2
Hydrogen	>1 nM/L	Reductive pathway possible, VC may accumulate	Not currently analyzed	3
	<1 nM/L	VC oxidized	Not currently analyzed	0
Volatile Fatty Acids	> 0.1 mg/L	Intermediates resulting from biodegradation of more complex compounds; carbon and energy source	Not currently analyzed	2
BTEX	> 0.1 mg/L	Carbon and energy source; drives dechlorination	In data set	2

TABLE 3-2. MONITORED NATURAL ATTENUATION ASSESSMENT USEPA SCORING SYSTEM
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Analysis	Concentration in Most Contaminated Zone	Significance	Applicability to the Existing Data Set	Scoring Value
PCE	Present	Material released	Not included in MNA due to low/infrequent concentrations	0
TCE	Present	Material released	In data set	0
	Present	Daughter product of PCE	In data set	2
DCE	Present	Material released	In data set	0
	Present	Daughter product of TCE If cis is > 80% of total DCE it is likely a daughter product 1,1-DCE can be chemical reaction product of TCA	In data set	2
VC	Present	Material released	In data set	0
	Present	Daughter product of DCE	In data set	2
1,1,1-TCA	Present	Material released	Not included in MNA due to low/infrequent concentrations	0
DCA	Present	Daughter product of TCA under reducing conditions	1,1,1-TCA not in MNA analysis (not released)	2
Ethene /Ethane	>0.01 mg/L	Daughter product of VC/ethene	Not currently analyzed	2
	>0.1 mg/L	Daughter product of VC/ethene	Not currently analyzed	3

Notes:
BTEX = benzene, toluene, ethylbenzene, xylene
C = centigrade
CO_2 = carbon dioxide
DCA = dichloroethane
DCE = dichloroethene
DO = dissolved oxygen
FE(III) =
mg/L = milligram/liter
MNA = monitored natural attenuation
mV = millivolts
nM/L = nanomoles/liter
ORP = oxidation reduction potential
PCE = tetrachloroethene
TCA = trichloroethane
TCE = trichloroethene

Source : United States Environmental Protection Agency. 1998. Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water, U.S, Environmental Protection Agency, Office of Research and Development, EPA/600/R-98-128. September.

TABLE 3-3. MONITORED NATURAL ATTENUATION USEPA SCORING RESULTS
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP NEW MEXICO

Well	DO, mg/L		Nitrate, mg/L		Iron II, mg/L		Sulfate, mg/L		ORP, mV		pH		TOC, mg/L		T, C		BTEX, mg/L		TCE, mg/L		DCE, mg/L		VC, mg/L		Total Score	Evaluation
	Average	Score	Average	Score	Average	Score	Average	Score	Average	Score	Average	Score	Average	Score	Average	Score	Average	Score	Average	Score	Average	Score	Average	Score		
MKTF-02	3.26	0	<1	2	0.86	0	84.47	0	113.82	0	7.45	0	12.05	0	12.30	0	2.27	2	0.002	2	0.02	2	0.021	2	8	Limited
MKTF-02R	3.15	0	<1	2	0.03	0	685.00	0	162.9	0	7.25	0	101.71	2	12.4	0	0.88	2	0.02	2	0.30	2	0.001	2	10	Limited
MKTF-04	2.02	0	<1	2	2.66	3	8.48	2	30.1	1	8.39	0	16.11	0	12.9	0	2.07	2	ND	0	0.02	2	ND	0	12	Limited
MKTF-04R	2.04	0	<1	2	1.00	0	78.00	0	49.6	1	6.87	0	152.82	2	15.0	0	5.92	2	0.0027	2	0.07	2	ND	0	9	Limited
MKTF-09	1.81	0	<1	2	1.91	3	22.64	0	31.46	1	7.25	0	14.76	0	13.82	0	3.10	2	ND	0	0.05	2	ND	0	10	Limited
MKTF-10	1.80	0	<1	2	8.56	3	0.00	2	51.37	0	7.05	0	77.21	2	13.92	0	16.35	2	ND	0	0.04	2	0.011	2	15	Adequate
MKTF-13	0.85	0	<1	2	17.33	3	0.91	2	-8.40	1	7.18	0	52.11	2	13.99	0	7.87	2	ND	0	ND	0	ND	0	12	Limited
MKTF-16	2.30	0	<1	2	5.49	3	38.33	0	38.43	1	6.88	0	41.97	2	16.39	0	12.07	2	ND	0	ND	0	ND	0	10	Limited
MKTF-17	2.34	0	<1	2	0.29	0	62.17	0	26.27	1	7.20	0	24.37	2	13.70	0	5.55	2	ND	0	ND	0	ND	0	7	Limited
MKTF-17R	4.30	0	<1	2	0.19	0	7.45	2	164.9	0	7.01	0	883.66	2	15.1	0	96.76	2	ND	0	ND	0	ND	0	8	Limited
MKTF-19	1.04	0	<1	2	9.99	3	0.00	2	-22.05	1	7.16	0	30.19	2	12.80	0	2.76	2	ND	0	ND	0	ND	0	12	Limited
MKTF-22	1.95	0	<1	2	3.96	3	5.89	2	-24.50	1	6.84	0	15.62	0	12.79	0	2.69	2	ND	0	ND	0	ND	0	10	Limited
MKTF-24	3.06	0	<1	2	0.78	0	26.99	0	157.94	0	7.36	0	20.90	2	12.66	0	5.07	2	0.0023	2	0.04	2	0.031	2	10	Limited
MKTF-25	4.20	0	<1	2	0.30	0	55.77	0	168.26	0	7.01	0	8.46	0	12.50	0	1.31	2	0.01	2	0.09	2	0.013	2	8	Limited

Notes:
Scoring ranges for evidence of anaerobic biodegradation:

Score	Interpretation
0 to 5	Inadequate
6 to 14	Limited
15 to 20	Adequate
>20	Strong

Source : United States Environmental Protection Agency (USEPA). 1998. Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water, U.S, Environmental Protection Agency, Office of Research and Development, EPA/600/R-98-128. September.

-- = no data measured
BTEX = benzene, toluene, ethylbenzene, xylene
C = centigrade
DCE = sum of 1,1-dichloroethene and cis-1,2-dichloroethene
DO = dissolved oxygen
mg/L = milligrams per liter
mV = millivolts
ND = not detected; values set at half the detection limit for averaging
ORP = oxidation reduction potential measured using a silver/silver chloride reference cell
T = temperature
TOC = total organic carbon
TCE = trichloroethene
USEPA = United States Environmental Protection Agency
VC = vinyl chloride

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TABLE 4-1. SUMMARY OF MANN-KENDALL CVOCs TREND ANALYSIS (2014-2021)
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Analyte	Location	First Sample Date	Last Sample Date	Descriptive Analysis										Mann-Kendall Trend Analysis				
				Sample Size	Number of Detects	% Detects	Sample Mean	Sample Median	Sample Std. Dev.	Minimum Detected	Maximum Detected	Minimum MDL	Maximum MDL	Number of Outliers	Serial Correlation	Seasonality	*p*-value	τ	Trend
1,1-Dichloroethane	MKTF-02	4/8/2014	6/17/2021	28	28	100.00%	0.0430	0.0445	0.022	0.0065	0.098	1.100E-04	4.000E-03	0	YES	NO	0.0000	-0.677	Decreasing
1,1-Dichloroethane	MKTF-02R	9/17/2021	12/16/2021	2	2	100.00%	0.0920	0.0920	0.025	0.074	0.11	2.700E-04	1.400E-03	--	--	--	--	--	--
1,1-Dichloroethane	MKTF-09	4/14/2014	3/3/2020	24	24	100.00%	0.0222	0.0230	0.008	0.0068	0.035	1.100E-04	8.000E-03	0	YES	NO	0.0000	-0.493	Decreasing
1,1-Dichloroethane	MKTF-10	4/11/2014	12/16/2021	29	17	58.62%	0.0337	0.0310	0.020	0.017	0.078	1.400E-03	4.000E-02	0	YES	NO	0.4199	-0.111	None
1,1-Dichloroethane	MKTF-16	4/10/2014	12/28/2021	28	15	53.57%	0.0368	0.0400	0.023	0.0026	0.081	2.700E-04	5.000E-02	0	NO	NO	0.0693	0.261	None
1,1-Dichloroethane	MKTF-22	4/10/2014	10/24/2019	21	6	28.57%	0.0060	0.0040	0.004	0.0017	0.015	1.000E-03	8.000E-03	0	NO	NO	0.1010	0.298	None
1,1-Dichloroethane	MKTF-24	4/8/2014	12/16/2021	30	30	100.00%	0.0779	0.0775	0.042	0.02	0.2	4.000E-04	1.250E-02	0	YES	NO	0.0000	-0.848	Decreasing
1,1-Dichloroethane	MKTF-25	4/8/2014	12/17/2021	28	28	100.00%	0.2045	0.1950	0.112	0.078	0.61	5.200E-04	2.000E-02	0	YES	NO	0.0000	-0.701	Decreasing
1,1-Dichloroethene	MKTF-02	4/8/2014	6/17/2021	28	26	92.86%	0.0238	0.0200	0.025	0.0014	0.11	9.900E-05	4.100E-03	0	YES	NO	0.0000	-0.619	Decreasing
1,1-Dichloroethene	MKTF-02R	9/17/2021	12/16/2021	2	2	100.00%	0.2950	0.2950	0.021	0.28	0.31	1.000E-03	2.000E-03	--	--	--	--	--	--
1,1-Dichloroethene	MKTF-09	4/14/2014	3/3/2020	24	24	100.00%	0.0337	0.0310	0.017	0.0063	0.074	9.900E-05	4.100E-03	0	YES	NO	0.0000	-0.547	Decreasing
1,1-Dichloroethene	MKTF-10	4/11/2014	12/16/2021	29	8	27.59%	0.0068	0.0066	0.003	0.0024	0.013	6.500E-04	1.250E-02	0	YES	NO	0.0473	0.217	Increasing
1,1-Dichloroethene	*MKTF-16*	*4/10/2014*	*12/28/2021*	*28*	*0*	*0.00%*	*0.0108*	*0.0100*	*0.009*	--	--	*2.000E-04*	*5.000E-02*	--	--	--	--	--	--
1,1-Dichloroethene	MKTF-22	4/10/2014	10/24/2019	21	13	61.90%	0.0065	0.0068	0.005	0.0051	0.017	8.100E-04	4.100E-03	0	YES	YES	0.0425	0.650	Increasing
1,1-Dichloroethene	MKTF-24	4/8/2014	12/16/2021	30	28	93.33%	0.0312	0.0280	0.022	0.0046	0.088	1.200E-04	1.250E-02	0	YES	NO	0.0000	-0.841	Decreasing
1,1-Dichloroethene	MKTF-25	4/8/2014	12/17/2021	28	28	100.00%	0.0924	0.0870	0.045	0.027	0.24	3.800E-04	2.500E-03	0	YES	NO	0.0000	-0.476	Decreasing
1,2-Dichloroethane	MKTF-02	4/8/2014	6/17/2021	28	23	82.14%	0.0065	0.0048	0.007	0.002	0.034	1.200E-04	4.000E-03	1	NO	NO	0.0569	-0.266	None
1,2-Dichloroethane	MKTF-02R	9/17/2021	12/16/2021	2	2	100.00%	0.0535	0.0535	0.019	0.04	0.067	2.500E-04	1.300E-03	--	--	--	--	--	--
1,2-Dichloroethane	*MKTF-09*	*4/14/2014*	*3/3/2020*	*24*	*0*	*0.00%*	*0.0025*	*0.0023*	*0.002*	--	--	*1.200E-04*	*8.000E-03*	--	--	--	--	--	--
1,2-Dichloroethane	*MKTF-10*	*4/11/2014*	*12/16/2021*	*29*	*1*	*3.45%*	*0.0115*	*0.0088*	*0.011*	*0.0039*	*0.0039*	*1.100E-03*	*4.000E-02*	*0*	*NO*	*NO*	*0.1066*	*0.263*	*None*
1,2-Dichloroethane	*MKTF-16*	*4/10/2014*	*12/28/2021*	*28*	*0*	*0.00%*	*0.0177*	*0.0130*	*0.013*	--	--	*2.500E-04*	*5.000E-02*	--	--	--	--	--	--
1,2-Dichloroethane	*MKTF-22*	*4/10/2014*	*10/24/2019*	*21*	*0*	*0.00%*	*0.0033*	*0.0035*	*0.002*	--	--	*1.100E-03*	*8.000E-03*	--	--	--	--	--	--
1,2-Dichloroethane	MKTF-24	4/8/2014	12/16/2021	30	20	66.67%	0.0118	0.0068	0.029	0.0046	0.163	2.600E-04	1.250E-02	1	NO	NO	0.3467	-0.132	None
1,2-Dichloroethane	MKTF-25	4/8/2014	12/17/2021	28	23	82.14%	0.0094	0.0099	0.006	0.0057	0.0321	2.600E-04	4.000E-03	1	NO	NO	0.7206	0.053	None
cis-1,2-Dichloroethene	MKTF-02	4/8/2014	6/17/2021	28	21	75.00%	0.0098	0.0099	0.007	0.0019	0.03	8.100E-05	3.800E-03	0	YES	NO	0.0010	-0.336	Decreasing
cis-1,2-Dichloroethene	MKTF-02R	9/17/2021	12/16/2021	2	2	100.00%	0.0027	0.0027	0.001	0.0023	0.0031	3.900E-04	1.900E-03	--	--	--	--	--	--
cis-1,2-Dichloroethene	MKTF-09	4/14/2014	3/3/2020	24	22	91.67%	0.0205	0.0210	0.009	0.0096	0.036	8.100E-05	7.800E-03	0	YES	NO	0.0008	-0.308	Decreasing
cis-1,2-Dichloroethene	MKTF-10	4/11/2014	12/16/2021	29	21	72.41%	0.0301	0.0320	0.021	0.0072	0.066	1.200E-03	2.000E-02	0	NO	NO	0.6487	0.064	None
cis-1,2-Dichloroethene	*MKTF-16*	*4/10/2014*	*12/28/2021*	*28*	*1*	*3.57%*	*0.0163*	*0.0120*	*0.013*	*0.0084*	*0.0084*	*3.900E-04*	*5.000E-02*	*0*	*NO*	*NO*	*0.6205*	*-0.089*	*None*
cis-1,2-Dichloroethene	MKTF-22	4/10/2014	10/24/2019	21	13	61.90%	0.0064	0.0078	0.004	0.0061	0.012	1.200E-03	7.500E-03	0	NO	NO	0.1424	0.248	None
cis-1,2-Dichloroethene	MKTF-24	4/8/2014	12/16/2021	30	19	63.33%	0.0201	0.0185	0.015	0.0086	0.057	1.200E-04	1.250E-02	0	YES	NO	0.0000	-0.766	Decreasing
cis-1,2-Dichloroethene	MKTF-25	4/8/2014	12/17/2021	28	28	100.00%	0.0392	0.0440	0.018	0.0149	0.1	2.000E-04	3.900E-03	0	YES	NO	0.0000	-0.468	Decreasing
Trichloroethene	MKTF-02	4/8/2014	6/17/2021	28	15	53.57%	0.0028	0.0026	0.002	0.0018	0.0073	1.600E-04	3.300E-03	0	YES	NO	0.0000	-0.537	Decreasing
Trichloroethene	MKTF-02R	9/17/2021	12/16/2021	2	2	100.00%	0.0190	0.0190	0.006	0.015	0.023	2.000E-04	1.000E-03	--	--	--	--	--	--
Trichloroethene	MKTF-09	4/14/2014	3/3/2020	24	14	58.33%	0.0046	0.0043	0.003	0.0027	0.011	1.600E-04	5.200E-03	0	NO	NO	0.0007	-0.527	Decreasing
Trichloroethene	*MKTF-10*	*4/11/2014*	*12/16/2021*	*29*	*0*	*0.00%*	*0.0079*	*0.0082*	*0.005*	--	--	*1.000E-03*	*1.800E-02*	--	--	--	--	--	--
Trichloroethene	*MKTF-16*	*4/10/2014*	*12/28/2021*	*28*	*0*	*0.00%*	*0.0142*	*0.0110*	*0.010*	--	--	*2.000E-04*	*5.000E-02*	--	--	--	--	--	--
Trichloroethene	*MKTF-22*	*4/10/2014*	*10/24/2019*	*21*	*0*	*0.00%*	*0.0026*	*0.0033*	*0.001*	--	--	*1.100E-03*	*5.200E-03*	--	--	--	--	--	--
Trichloroethene	*MKTF-24*	*4/8/2014*	*12/16/2021*	*30*	*5*	*16.67%*	*0.0034*	*0.0033*	*0.002*	*0.0023*	*0.0052*	*1.900E-04*	*1.250E-02*	*0*	*YES*	*NO*	*0.0393*	*-0.223*	*Decreasing*
Trichloroethene	MKTF-25	4/8/2014	12/17/2021	28	27	96.43%	0.0207	0.0185	0.013	0.006	0.064	1.100E-04	2.600E-03	0	YES	NO	0.0000	-0.526	Decreasing

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TABLE 4-1. SUMMARY OF MANN-KENDALL CVOCs TREND ANALYSIS (2014-2021)
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Analyte	Location	First Sample Date	Last Sample Date	Descriptive Analysis										Mann-Kendall Trend Analysis				
				Sample Size	Number of Detects	% Detects	Sample Mean	Sample Median	Sample Std. Dev.	Minimum Detected	Maximum Detected	Minimum MDL	Maximum MDL	Number of Outliers	Serial Correlation	Seasonality	*p*-value	τ	Trend
Vinyl Chloride	MKTF-02	4/8/2014	6/17/2021	28	21	75.00%	0.0086	0.0051	0.009	0.001	0.028	1.300E-04	3.600E-03	0	YES	NO	0.0000	0.537	Increasing
Vinyl Chloride	MKTF-02R	9/17/2021	12/16/2021	2	2	100.00%	0.0015	0.0015	0.001	0.001	0.0019	3.200E-04	1.600E-03	--	--	--	--	--	--
Vinyl Chloride	MKTF-09	4/14/2014	3/3/2020	24	0	0.00%	0.0021	0.0018	0.001	--	--	1.300E-04	4.600E-03	--	--	--	--	--	--
Vinyl Chloride	MKTF-10	4/11/2014	12/16/2021	29	10	34.48%	0.0124	0.0100	0.006	0.0081	0.023	9.800E-04	2.300E-02	0	YES	NO	0.0256	0.384	Increasing
Vinyl Chloride	MKTF-16	4/10/2014	12/28/2021	28	3	10.71%	0.0153	0.0155	0.011	0.0058	0.04	3.200E-04	5.000E-02	0	NO	NO	0.0496	0.314	Increasing
Vinyl Chloride	MKTF-22	4/10/2014	10/24/2019	21	0	0.00%	0.0024	0.0022	0.001	--	--	1.100E-03	4.600E-03	--	--	--	--	--	--
Vinyl Chloride	MKTF-24	4/8/2014	12/16/2021	30	21	70.00%	0.0198	0.0245	0.014	0.0049	0.038	1.100E-04	1.250E-02	0	YES	NO	0.0000	0.593	Increasing
Vinyl Chloride	MKTF-25	4/8/2014	12/17/2021	28	15	53.57%	0.0052	0.0029	0.009	0.00096	0.046	1.800E-04	4.600E-03	1	YES	NO	0.0000	0.436	Increasing

Abbreviations:
%: percent
--: not applicable
MDL: Method Detection Limit
CVOC: Chlorinated Volatile Organic Compound
MDL: Method Detection Limit
Std. Dev.: Standard Deviation

Notes:
All results are reported in mg/L.
Trace results (i.e., estimated values between reporting limit and MDL) were reported since 06/08/2016 and were used as detected values.
Outlier analysis was performed for all analyte-well pairs with sample size of 4 or larger and at least one detected result above the MDL.
Trend analyses was performed for all analyte-well pairs with sample a size of 8 or larger and at least one detected result above the MDL.
Italics: Trend analysis results based on data with less than a 25% detection rate should be considered with caution.
MKTF-02R is the replacement well for well MKTF-02; which was installed in 2021.

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TABLE 4-2. SUMMARY OF MANN-KENDALL MTBE TREND ANALYSIS (2014-2021)
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Analyte	Location	First Sample Date	Last Sample Date	Descriptive Analysis									Number of Outliers	Mann-Kendall Trend Analysis				
				Sample Size	Number of Detects	% Detects	Sample Mean	Sample Median	Sample Std. Dev.	Minimum Detected	Maximum Detected	Minimum MDL	Maximum MDL		Serial Correlation	Seasonality	*p*-value	τ	Trend
MTBE	MKTF-04	4/11/2014	3/3/2020	24	24	100.00%	1.8958	1.9000	0.393	1.2	2.5	1.700E-03	2.400E-02	0	YES	NO	0.1071	0.159	None
MTBE	MKTF-04R	9/17/2021	12/22/2021	2	2	100.00%	1.2300	1.2300	0.523	0.86	1.6	2.000E-03	3.900E-02	--	--	--	--	--	--
MTBE	MKTF-09	4/14/2014	3/3/2020	24	24	100.00%	0.6013	0.5300	0.214	0.31	1.2	8.700E-04	1.300E-02	0	YES	NO	0.0000	-0.522	Decreasing
MTBE	MKTF-16	4/10/2014	12/28/2021	28	28	100.00%	0.9615	0.7600	0.659	0.004	2.1	3.900E-04	7.400E-02	2	YES	NO	0.0000	-0.828	Decreasing
MTBE	MKTF-17	4/9/2014	10/29/2019	23	23	100.00%	1.9800	0.7700	2.153	0.28	7.4	8.700E-04	2.500E-02	0	YES	NO	0.1555	0.257	None
MTBE	MKTF-17R	9/17/2021	12/21/2021	2	2	100.00%	4.1000	4.1000	0.283	3.9	4.3	3.900E-02	3.900E-02	--	--	--	--	--	--
MTBE	MKTF-19	4/9/2014	10/29/2019	22	22	100.00%	9.4773	9.7000	1.131	7.8	12	8.700E-03	1.300E-01	0	YES	NO	0.4721	-0.074	None
MTBE	MKTF-20	4/11/2014	2/5/2020	21	20	95.24%	0.1241	0.1300	0.090	0.0057	0.38	2.100E-03	3.200E-02	0	NO	NO	0.2758	-0.178	None
MTBE	MKTF-21	4/11/2014	3/11/2021	21	21	100.00%	0.4669	0.5200	0.299	0.015	1.2	7.900E-04	1.300E-02	0	YES	NO	0.0000	-0.586	Decreasing
MTBE	MKTF-22	4/10/2014	10/24/2019	21	21	100.00%	5.4333	5.7000	1.593	2.6	8.8	9.100E-03	9.100E-02	0	YES	NO	0.5057	-0.095	None
MTBE	MKTF-23	9/23/2014	10/29/2019	9	9	100.00%	1.0200	1.1000	0.453	0.33	1.6	1.700E-03	4.600E-02	0	NO	NO	0.1138	0.457	None
MTBE	MKTF-24	4/8/2014	12/16/2021	30	30	100.00%	0.1467	0.1450	0.045	0.063	0.23	2.500E-04	1.850E-02	0	YES	NO	0.0000	-0.584	Decreasing
MTBE	MKTF-25	4/8/2014	12/17/2021	28	28	100.00%	0.3755	0.2500	0.257	0.12	0.98	5.000E-04	4.600E-03	0	YES	NO	0.0027	0.399	Increasing

Abbreviations:
%: percent
--: not applicable
MDL: Method Detection Limit
MTBE: methyl tert-butyl ether
Std. Dev.: Standard Deviation

Notes:
All results are reported in mg/L.
Trace results (i.e., estimated values between reporting limit and MDL) were reported since 06/08/2016 and were used as detected values.
Outlier was performed for all analyte-well pairs with sample size 4 or larger and at least one detected results above the MDL.
Trend analyses was performed for all analyte-well pairs with a sample size of 8 or larger and at least one detected result above the MDL.
MKTF-04R and MKTF-07R are replacement wells for wells MKTF-04 and MKTF-07; they were installed in 2021.

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Appendices A through D (Please see attached CD)

Appendix A – Laboratory Data

Appendix B – Data Validation Reports

Appendix C – CVOC Time Series Plots

Appendix D – MTBE Time Series Plots

Appendix A – Laboratory Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

July 26, 2021

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL:
FAX

RE: 2021 GW Sampling 2nd Quarter OrderNo.: 2106C55

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 13 sample(s) on 6/23/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:15:00 AM
Lab ID: 2106C55-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	5800	23	100		µg/L	100	6/25/2021 5:03:47 PM	B79410
Toluene	590	2.0	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Ethylbenzene	1900	21	100		µg/L	100	6/25/2021 5:03:47 PM	B79410
Methyl tert-butyl ether (MTBE)	12	3.9	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,2,4-Trimethylbenzene	950	1.2	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,3,5-Trimethylbenzene	230	1.8	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,2-Dichloroethane (EDC)	ND	2.2	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Naphthalene	200	2.8	20		µg/L	10	6/25/2021 5:31:04 PM	B79410
1-Methylnaphthalene	62	8.4	40		µg/L	10	6/25/2021 5:31:04 PM	B79410
2-Methylnaphthalene	99	6.9	40		µg/L	10	6/25/2021 5:31:04 PM	B79410
Acetone	ND	23	100		µg/L	10	6/25/2021 5:31:04 PM	B79410
Bromobenzene	ND	2.8	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Bromodichloromethane	ND	2.0	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Bromoform	ND	3.1	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Bromomethane	ND	16	30		µg/L	10	6/25/2021 5:31:04 PM	B79410
2-Butanone	ND	11	100		µg/L	10	6/25/2021 5:31:04 PM	B79410
Carbon disulfide	ND	4.4	100		µg/L	10	6/25/2021 5:31:04 PM	B79410
Carbon Tetrachloride	ND	1.8	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Chlorobenzene	ND	1.4	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Chloroethane	ND	3.8	20		µg/L	10	6/25/2021 5:31:04 PM	B79410
Chloroform	ND	1.3	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Chloromethane	ND	4.0	30		µg/L	10	6/25/2021 5:31:04 PM	B79410
2-Chlorotoluene	ND	1.3	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
4-Chlorotoluene	ND	5.1	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
cis-1,2-DCE	11	3.9	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	6/25/2021 5:31:04 PM	B79410
Dibromochloromethane	ND	2.8	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Dibromomethane	ND	3.1	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Dichlorodifluoromethane	ND	4.4	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,1-Dichloroethane	18	2.7	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,1-Dichloroethene	4.7	1.3	10	J	µg/L	10	6/25/2021 5:31:04 PM	B79410
1,2-Dichloropropane	ND	1.3	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,3-Dichloropropane	ND	1.8	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
2,2-Dichloropropane	ND	2.6	20		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,1-Dichloropropene	ND	1.8	10		µg/L	10	6/25/2021 5:31:04 PM	B79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:15:00 AM
Lab ID: 2106C55-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	3.3	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
2-Hexanone	ND	18	100		µg/L	10	6/25/2021 5:31:04 PM	B79410
Isopropylbenzene	80	1.8	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
4-Isopropyltoluene	8.3	2.0	10	J	µg/L	10	6/25/2021 5:31:04 PM	B79410
4-Methyl-2-pentanone	ND	11	100		µg/L	10	6/25/2021 5:31:04 PM	B79410
Methylene Chloride	ND	4.0	30		µg/L	10	6/25/2021 5:31:04 PM	B79410
n-Butylbenzene	21	2.5	30	J	µg/L	10	6/25/2021 5:31:04 PM	B79410
n-Propylbenzene	130	1.8	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
sec-Butylbenzene	12	6.1	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Styrene	ND	1.3	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
tert-Butylbenzene	ND	2.4	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	6/25/2021 5:31:04 PM	B79410
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
trans-1,2-DCE	ND	4.9	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,2,3-Trichlorobenzene	ND	1.3	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,1,2-Trichloroethane	ND	1.9	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Trichlorofluoromethane	ND	0.92	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	6/25/2021 5:31:04 PM	B79410
Vinyl chloride	12	2.0	10		µg/L	10	6/25/2021 5:31:04 PM	B79410
Xylenes, Total	8400	55	150		µg/L	100	6/25/2021 5:03:47 PM	B79410
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	10	6/25/2021 5:31:04 PM	B79410
Surr: 4-Bromofluorobenzene	99.0	0	70-130		%Rec	10	6/25/2021 5:31:04 PM	B79410
Surr: Dibromofluoromethane	97.7	0	70-130		%Rec	10	6/25/2021 5:31:04 PM	B79410
Surr: Toluene-d8	106	0	70-130		%Rec	10	6/25/2021 5:31:04 PM	B79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	45	0.28	0.50		mg/L	10	6/25/2021 5:31:04 PM	GW794
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	10	6/25/2021 5:31:04 PM	GW794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:15:00 AM
Lab ID: 2106C55-001B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.1	0.016	0.064		mg/L	1	6/30/2021 6:59:00 PM	60941
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/30/2021 6:59:00 PM	60941
Surr: DNOP	94.5	0	15-142		%Rec	1	6/30/2021 6:59:00 PM	60941

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:15:00 AM
Lab ID: 2106C55-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Azobenzene	ND	0.55	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Benzoic acid	13	1.1	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Benzyl alcohol	ND	0.68	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Bis(2-ethylhexyl)phthalate	4.6	4.5	10	J	µg/L	1	7/7/2021 4:13:51 PM	60957
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Carbazole	5.5	0.56	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
4-Chloroaniline	ND	0.53	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
2-Chlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	7/7/2021 4:13:51 PM	60957
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	7/7/2021 4:13:51 PM	60957
Dibenzofuran	3.3	0.38	5.0	J	µg/L	1	7/7/2021 4:13:51 PM	60957
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Diethyl phthalate	ND	3.9	10		µg/L	1	7/7/2021 4:13:51 PM	60957
Dimethyl phthalate	ND	2.0	10		µg/L	1	7/7/2021 4:13:51 PM	60957
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
2,4-Dimethylphenol	15	0.97	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Hexachloroethane	ND	0.45	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Isophorone	ND	0.40	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
2-Methylphenol	5.9	0.51	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957

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Qualifiers:

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D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:15:00 AM
Lab ID: 2106C55-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
2-Nitroaniline	ND	0.31	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
3-Nitroaniline	ND	1.6	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
4-Nitroaniline	ND	0.47	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Nitrobenzene	ND	0.51	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
2-Nitrophenol	ND	0.47	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
4-Nitrophenol	ND	0.28	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Pentachlorophenol	ND	0.59	20		µg/L	1	7/7/2021 4:13:51 PM	60957
Phenol	27	0.33	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Pyridine	ND	0.93	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	7/7/2021 4:13:51 PM	60957
Surr: 2-Fluorophenol	0	0	15-88.8	S	%Rec	1	7/7/2021 4:13:51 PM	60957
Surr: Phenol-d5	38.4	0	15-71.9		%Rec	1	7/7/2021 4:13:51 PM	60957
Surr: 2,4,6-Tribromophenol	37.2	0	15-97.4		%Rec	1	7/7/2021 4:13:51 PM	60957
Surr: Nitrobenzene-d5	55.6	0	15-117		%Rec	1	7/7/2021 4:13:51 PM	60957
Surr: 2-Fluorobiphenyl	55.4	0	15-100		%Rec	1	7/7/2021 4:13:51 PM	60957
Surr: 4-Terphenyl-d14	82.3	0	15-120		%Rec	1	7/7/2021 4:13:51 PM	60957
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	120	0.34	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
1-Methylnaphthalene	42	0.24	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
2-Methylnaphthalene	67	0.34	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Acenaphthylene	ND	0.43	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Acenaphthene	2.0	0.31	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Fluorene	3.6	0.31	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Phenanthrene	2.6	0.57	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Anthracene	ND	0.34	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Fluoranthene	ND	1.0	2.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Pyrene	2.4	1.6	2.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Benz(a)anthracene	ND	0.36	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Chrysene	ND	0.24	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Benzo(b)fluoranthene	ND	0.57	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Benzo(k)fluoranthene	ND	0.36	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Benzo(a)pyrene	ND	0.34	0.70		µg/L	1	7/7/2021 11:57:00 AM	60905
Dibenz(a,h)anthracene	ND	0.34	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Benzo(g,h,i)perylene	ND	0.34	1.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Indeno(1,2,3-cd)pyrene	ND	0.43	3.0		µg/L	1	7/7/2021 11:57:00 AM	60905
Surr: Nitrobenzene-d5	57.0	0	26.3-112		%Rec	1	7/7/2021 11:57:00 AM	60905
Surr: 2-Fluorobiphenyl	34.5	0	21.1-110		%Rec	1	7/7/2021 11:57:00 AM	60905

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:15:00 AM
Lab ID: 2106C55-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	97.5	0	17.6-167		%Rec	1	7/7/2021 11:57:00 AM	60905

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:15:00 AM
Lab ID: 2106C55-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.72	0.28	0.50		mg/L	5	6/24/2021 12:47:13 PM	R79334
Chloride	1000	25	50	*	mg/L	100	7/2/2021 5:46:37 PM	R79574
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/24/2021 12:47:13 PM	R79334
Bromide	0.87	0.25	0.50		mg/L	5	6/24/2021 12:47:13 PM	R79334
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	6/24/2021 12:47:13 PM	R79334
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/24/2021 12:47:13 PM	R79334
Sulfate	ND	1.2	2.5		mg/L	5	6/24/2021 12:47:13 PM	R79334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:15:00 AM
Lab ID: 2106C55-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.62	0.0074	0.020	*	mg/L	1	6/30/2021 11:12:42 AM	61019
Barium	9.8	0.016	0.030	*	mg/L	10	6/30/2021 11:14:04 AM	61019
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2021 11:12:42 AM	61019
Boron	0.51	0.0074	0.040		mg/L	1	6/30/2021 11:12:42 AM	61019
Cadmium	ND	0.0015	0.0020		mg/L	1	6/30/2021 11:12:42 AM	61019
Calcium	310	1.1	10		mg/L	10	6/30/2021 11:14:04 AM	61019
Chromium	ND	0.0021	0.0060		mg/L	1	6/30/2021 11:12:42 AM	61019
Cobalt	0.0033	0.0024	0.0060	J	mg/L	1	6/30/2021 11:12:42 AM	61019
Copper	ND	0.0047	0.0060		mg/L	1	6/30/2021 11:12:42 AM	61019
Iron	9.5	0.13	0.50	*	mg/L	10	6/30/2021 11:14:04 AM	61019
Magnesium	80	0.067	1.0		mg/L	1	6/30/2021 11:12:42 AM	61019
Manganese	5.7	0.0081	0.020	*	mg/L	10	6/30/2021 11:14:04 AM	61019
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/30/2021 11:12:42 AM	61019
Nickel	0.018	0.0033	0.010		mg/L	1	6/30/2021 11:12:42 AM	61019
Potassium	0.93	0.16	1.0	J	mg/L	1	6/30/2021 11:12:42 AM	61019
Silver	ND	0.0013	0.0050		mg/L	1	6/30/2021 11:12:42 AM	61019
Sodium	450	1.9	10		mg/L	10	6/30/2021 11:14:04 AM	61019
Zinc	ND	0.0064	0.010		mg/L	1	6/30/2021 11:12:42 AM	61019
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/2/2021 12:30:31 PM	61019
Arsenic	0.011	0.00013	0.0010	*	mg/L	1	7/2/2021 12:30:31 PM	61019
Lead	0.00031	0.000061	0.00050	J	mg/L	1	7/2/2021 12:30:31 PM	61019
Selenium	ND	0.00037	0.0010		mg/L	1	7/2/2021 12:30:31 PM	61019
Thallium	ND	0.00025	0.00025		mg/L	1	7/2/2021 12:30:31 PM	61019
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/30/2021 1:38:19 PM	61000

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:15:00 AM
Lab ID: 2106C55-001F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/28/2021 10:28:55 AM	A79403
Barium	9.7	0.011	0.020	*	mg/L	10	6/28/2021 11:48:22 AM	B79403
Beryllium	ND	0.00088	0.0020		mg/L	1	6/28/2021 10:28:55 AM	A79403
Boron	0.49	0.0067	0.040		mg/L	1	6/28/2021 10:28:55 AM	A79403
Cadmium	ND	0.0012	0.0020		mg/L	1	6/28/2021 10:28:55 AM	A79403
Chromium	ND	0.0020	0.0060		mg/L	1	6/28/2021 10:28:55 AM	A79403
Cobalt	ND	0.0024	0.0060		mg/L	1	6/28/2021 10:28:55 AM	A79403
Copper	ND	0.0035	0.0060		mg/L	1	6/28/2021 10:28:55 AM	A79403
Iron	9.7	0.10	0.20	*	mg/L	10	6/28/2021 11:48:22 AM	B79403
Manganese	5.9	0.0058	0.020	*	mg/L	10	6/28/2021 11:48:22 AM	B79403
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/28/2021 10:28:55 AM	A79403
Nickel	0.017	0.0033	0.010		mg/L	1	6/28/2021 10:28:55 AM	A79403
Silver	0.0015	0.0013	0.0050	J	mg/L	1	6/28/2021 10:28:55 AM	A79403
Zinc	0.0068	0.0060	0.010	J	mg/L	1	6/28/2021 10:28:55 AM	A79403
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2021 3:27:53 PM	B79527
Arsenic	0.011	0.00012	0.0010	*	mg/L	1	7/1/2021 3:27:53 PM	B79527
Lead	ND	0.00028	0.0025		mg/L	5	7/1/2021 6:54:25 PM	B79527
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2021 3:27:53 PM	B79527
Thallium	ND	0.0012	0.0012		mg/L	5	7/1/2021 6:54:25 PM	B79527
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/7/2021 4:12:16 PM	61150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-1
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:30:00 AM
Lab ID: 2106C55-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	3800	11	50		µg/L	50	6/29/2021 12:43:55 AM	A79429
Toluene	1500	10	50		µg/L	50	6/29/2021 12:43:55 AM	A79429
Ethylbenzene	880	11	50		µg/L	50	6/29/2021 12:43:55 AM	A79429
Methyl tert-butyl ether (MTBE)	3.1	2.0	5.0	J	µg/L	5	6/25/2021 6:25:47 PM	B79410
Xylenes, Total	5000	28	75		µg/L	50	6/29/2021 12:43:55 AM	A79429
Surr: 1,2-Dichloroethane-d4	84.4	0	70-130		%Rec	5	6/25/2021 6:25:47 PM	B79410
Surr: Dibromofluoromethane	80.7	0	70-130		%Rec	5	6/25/2021 6:25:47 PM	B79410
Surr: Toluene-d8	104	0	70-130		%Rec	5	6/25/2021 6:25:47 PM	B79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	34	0.14	0.25		mg/L	5	6/25/2021 6:25:47 PM	GW794
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	5	6/25/2021 6:25:47 PM	GW794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-1
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:30:00 AM
Lab ID: 2106C55-002B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.1	0.016	0.064		mg/L	1	6/30/2021 7:46:20 PM	60941
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/30/2021 7:46:20 PM	60941
Surr: DNOP	89.3	0	15-142		%Rec	1	6/30/2021 7:46:20 PM	60941

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-1
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:30:00 AM
Lab ID: 2106C55-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Azobenzene	ND	0.55	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Benzoic acid	ND	1.1	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Benzyl alcohol	ND	0.68	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Bis(2-ethylhexyl)phthalate	5.5	4.5	10	J	µg/L	1	7/7/2021 4:55:58 PM	60957
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Carbazole	ND	0.56	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
4-Chloroaniline	ND	0.53	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
2-Chlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	7/7/2021 4:55:58 PM	60957
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	7/7/2021 4:55:58 PM	60957
Dibenzofuran	ND	0.38	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Diethyl phthalate	ND	3.9	10		µg/L	1	7/7/2021 4:55:58 PM	60957
Dimethyl phthalate	ND	2.0	10		µg/L	1	7/7/2021 4:55:58 PM	60957
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
2,4-Dimethylphenol	16	0.97	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Hexachloroethane	ND	0.45	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Isophorone	ND	0.40	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
2-Methylphenol	8.9	0.51	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-1
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:30:00 AM
Lab ID: 2106C55-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
2-Nitroaniline	ND	0.31	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
3-Nitroaniline	ND	1.6	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
4-Nitroaniline	ND	0.47	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Nitrobenzene	ND	0.51	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
2-Nitrophenol	ND	0.47	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
4-Nitrophenol	ND	0.28	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Pentachlorophenol	ND	0.59	20		µg/L	1	7/7/2021 4:55:58 PM	60957
Phenol	26	0.33	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Pyridine	ND	0.93	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	7/7/2021 4:55:58 PM	60957
Surr: 2-Fluorophenol	0	0	15-88.8	S	%Rec	1	7/7/2021 4:55:58 PM	60957
Surr: Phenol-d5	40.8	0	15-71.9		%Rec	1	7/7/2021 4:55:58 PM	60957
Surr: 2,4,6-Tribromophenol	75.3	0	15-97.4		%Rec	1	7/7/2021 4:55:58 PM	60957
Surr: Nitrobenzene-d5	62.5	0	15-117		%Rec	1	7/7/2021 4:55:58 PM	60957
Surr: 2-Fluorobiphenyl	59.8	0	15-100		%Rec	1	7/7/2021 4:55:58 PM	60957
Surr: 4-Terphenyl-d14	88.8	0	15-120		%Rec	1	7/7/2021 4:55:58 PM	60957
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	13	0.17	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
1-Methylnaphthalene	4.3	0.12	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
2-Methylnaphthalene	4.7	0.17	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
Acenaphthylene	ND	0.22	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
Acenaphthene	ND	0.15	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
Fluorene	1.3	0.15	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
Phenanthrene	1.0	0.28	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
Anthracene	1.7	0.17	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
Fluoranthene	ND	0.50	1.0		µg/L	1	7/7/2021 12:41:00 PM	60905
Pyrene	1.3	0.80	1.0		µg/L	1	7/7/2021 12:41:00 PM	60905
Benz(a)anthracene	ND	0.18	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
Chrysene	ND	0.12	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
Benzo(b)fluoranthene	ND	0.28	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
Benzo(k)fluoranthene	ND	0.18	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
Benzo(a)pyrene	ND	0.17	0.35		µg/L	1	7/7/2021 12:41:00 PM	60905
Dibenz(a,h)anthracene	ND	0.17	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
Benzo(g,h,i)perylene	ND	0.17	0.50		µg/L	1	7/7/2021 12:41:00 PM	60905
Indeno(1,2,3-cd)pyrene	ND	0.22	1.5		µg/L	1	7/7/2021 12:41:00 PM	60905
Surr: Nitrobenzene-d5	55.0	0	26.3-112		%Rec	1	7/7/2021 12:41:00 PM	60905
Surr: 2-Fluorobiphenyl	44.0	0	21.1-110		%Rec	1	7/7/2021 12:41:00 PM	60905

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-1
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:30:00 AM
Lab ID: 2106C55-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	84.0	0	17.6-167		%Rec	1	7/7/2021 12:41:00 PM	60905

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-1
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:30:00 AM
Lab ID: 2106C55-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.28	0.50		mg/L	5	6/24/2021 1:12:59 PM	R79334
Chloride	110	5.0	10		mg/L	20	6/24/2021 1:25:52 PM	R79334
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/24/2021 1:12:59 PM	R79334
Bromide	2.5	0.25	0.50		mg/L	5	6/24/2021 1:12:59 PM	R79334
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	6/24/2021 1:12:59 PM	R79334
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/24/2021 1:12:59 PM	R79334
Sulfate	ND	1.2	2.5		mg/L	5	6/24/2021 1:12:59 PM	R79334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-1
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:30:00 AM
Lab ID: 2106C55-002E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.023	0.0074	0.020		mg/L	1	6/30/2021 11:15:26 AM	61019
Barium	3.7	0.0082	0.015	*	mg/L	5	6/30/2021 11:19:24 AM	61019
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2021 11:15:26 AM	61019
Boron	0.77	0.037	0.20		mg/L	5	6/30/2021 11:19:24 AM	61019
Cadmium	ND	0.0015	0.0020		mg/L	1	6/30/2021 11:15:26 AM	61019
Calcium	79	0.57	5.0		mg/L	5	6/30/2021 11:19:24 AM	61019
Chromium	ND	0.0021	0.0060		mg/L	1	6/30/2021 11:15:26 AM	61019
Cobalt	ND	0.0024	0.0060		mg/L	1	6/30/2021 11:15:26 AM	61019
Copper	ND	0.0047	0.0060		mg/L	1	6/30/2021 11:15:26 AM	61019
Iron	9.5	0.13	0.50	*	mg/L	10	6/30/2021 11:23:22 AM	61019
Magnesium	18	0.067	1.0		mg/L	1	6/30/2021 11:15:26 AM	61019
Manganese	2.0	0.0041	0.010	*	mg/L	5	6/30/2021 11:19:24 AM	61019
Molybdenum	0.015	0.0065	0.0080		mg/L	1	6/30/2021 11:15:26 AM	61019
Nickel	0.011	0.0033	0.010		mg/L	1	6/30/2021 11:15:26 AM	61019
Potassium	0.31	0.16	1.0	J	mg/L	1	6/30/2021 11:15:26 AM	61019
Silver	ND	0.0013	0.0050		mg/L	1	6/30/2021 11:15:26 AM	61019
Sodium	360	0.93	5.0		mg/L	5	6/30/2021 11:19:24 AM	61019
Zinc	ND	0.0064	0.010		mg/L	1	6/30/2021 11:15:26 AM	61019
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/2/2021 12:37:47 PM	61019
Arsenic	0.021	0.00013	0.0010	*	mg/L	1	7/2/2021 12:37:47 PM	61019
Lead	0.00019	0.000061	0.00050	J	mg/L	1	7/2/2021 12:37:47 PM	61019
Selenium	0.00058	0.00037	0.0010	J	mg/L	1	7/2/2021 12:37:47 PM	61019
Thallium	ND	0.00025	0.00025		mg/L	1	7/2/2021 12:37:47 PM	61019
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/30/2021 1:40:45 PM	61000

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-1
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 9:30:00 AM
Lab ID: 2106C55-002F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/28/2021 10:31:36 AM	A79403
Barium	3.4	0.0056	0.010	*	mg/L	5	6/28/2021 10:32:56 AM	A79403
Beryllium	ND	0.00088	0.0020		mg/L	1	6/28/2021 10:31:36 AM	A79403
Boron	0.83	0.0067	0.040		mg/L	1	6/28/2021 10:31:36 AM	A79403
Cadmium	ND	0.0012	0.0020		mg/L	1	6/28/2021 10:31:36 AM	A79403
Chromium	ND	0.0020	0.0060		mg/L	1	6/28/2021 10:31:36 AM	A79403
Cobalt	ND	0.0024	0.0060		mg/L	1	6/28/2021 10:31:36 AM	A79403
Copper	ND	0.0035	0.0060		mg/L	1	6/28/2021 10:31:36 AM	A79403
Iron	8.0	0.10	0.20	*	mg/L	10	6/28/2021 11:51:21 AM	B79403
Manganese	2.0	0.0029	0.010	*	mg/L	5	6/28/2021 10:32:56 AM	A79403
Molybdenum	0.012	0.0056	0.0080		mg/L	1	6/28/2021 10:31:36 AM	A79403
Nickel	0.011	0.0033	0.010		mg/L	1	6/28/2021 10:31:36 AM	A79403
Silver	ND	0.0013	0.0050		mg/L	1	6/28/2021 10:31:36 AM	A79403
Zinc	0.020	0.0060	0.010		mg/L	1	6/28/2021 10:31:36 AM	A79403
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2021 3:32:38 PM	B79527
Arsenic	0.014	0.00012	0.0010	*	mg/L	1	7/1/2021 3:32:38 PM	B79527
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2021 3:32:38 PM	B79527
Selenium	0.00058	0.00034	0.0010	J	mg/L	1	7/1/2021 3:32:38 PM	B79527
Thallium	ND	0.00025	0.00025		mg/L	1	7/1/2021 3:32:38 PM	B79527
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/7/2021 4:14:42 PM	61150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:20:00 AM
Lab ID: 2106C55-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	6800	110	500		µg/L	500	6/25/2021 6:53:03 PM	B79410
Toluene	100	10	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Ethylbenzene	560	11	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Methyl tert-butyl ether (MTBE)	2600	20	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,2,4-Trimethylbenzene	360	6.1	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,3,5-Trimethylbenzene	46	9.1	50	J	µg/L	50	6/25/2021 7:20:24 PM	B79410
1,2-Dichloroethane (EDC)	ND	11	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,2-Dibromoethane (EDB)	ND	15	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Naphthalene	260	14	100		µg/L	50	6/25/2021 7:20:24 PM	B79410
1-Methylnaphthalene	120	42	200	J	µg/L	50	6/25/2021 7:20:24 PM	B79410
2-Methylnaphthalene	120	35	200	J	µg/L	50	6/25/2021 7:20:24 PM	B79410
Acetone	ND	120	500		µg/L	50	6/25/2021 7:20:24 PM	B79410
Bromobenzene	ND	14	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Bromodichloromethane	ND	10	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Bromoform	ND	16	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Bromomethane	ND	78	150		µg/L	50	6/25/2021 7:20:24 PM	B79410
2-Butanone	290	56	500	J	µg/L	50	6/25/2021 7:20:24 PM	B79410
Carbon disulfide	ND	22	500		µg/L	50	6/25/2021 7:20:24 PM	B79410
Carbon Tetrachloride	ND	8.8	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Chlorobenzene	ND	6.8	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Chloroethane	ND	19	100		µg/L	50	6/25/2021 7:20:24 PM	B79410
Chloroform	ND	6.7	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Chloromethane	ND	20	150		µg/L	50	6/25/2021 7:20:24 PM	B79410
2-Chlorotoluene	ND	6.6	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
4-Chlorotoluene	ND	26	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
cis-1,2-DCE	ND	19	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
cis-1,3-Dichloropropene	ND	18	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,2-Dibromo-3-chloropropane	ND	29	100		µg/L	50	6/25/2021 7:20:24 PM	B79410
Dibromochloromethane	ND	14	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Dibromomethane	ND	15	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,2-Dichlorobenzene	ND	7.7	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,3-Dichlorobenzene	ND	8.1	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,4-Dichlorobenzene	ND	10	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Dichlorodifluoromethane	ND	22	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,1-Dichloroethane	ND	14	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,1-Dichloroethene	ND	6.5	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,2-Dichloropropane	ND	6.7	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,3-Dichloropropane	ND	9.0	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
2,2-Dichloropropane	ND	13	100		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,1-Dichloropropene	ND	9.0	50		µg/L	50	6/25/2021 7:20:24 PM	B79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:20:00 AM
Lab ID: 2106C55-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	16	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
2-Hexanone	ND	90	500		µg/L	50	6/25/2021 7:20:24 PM	B79410
Isopropylbenzene	37	9.1	50	J	µg/L	50	6/25/2021 7:20:24 PM	B79410
4-Isopropyltoluene	ND	10	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
4-Methyl-2-pentanone	ND	56	500		µg/L	50	6/25/2021 7:20:24 PM	B79410
Methylene Chloride	ND	20	150		µg/L	50	6/25/2021 7:20:24 PM	B79410
n-Butylbenzene	17	13	150	J	µg/L	50	6/25/2021 7:20:24 PM	B79410
n-Propylbenzene	75	9.1	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
sec-Butylbenzene	ND	30	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Styrene	ND	6.5	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
tert-Butylbenzene	ND	12	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,1,1,2-Tetrachloroethane	ND	13	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,1,2,2-Tetrachloroethane	ND	14	100		µg/L	50	6/25/2021 7:20:24 PM	B79410
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
trans-1,2-DCE	ND	24	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
trans-1,3-Dichloropropene	ND	17	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,2,3-Trichlorobenzene	ND	6.7	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,2,4-Trichlorobenzene	ND	12	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,1,1-Trichloroethane	ND	15	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,1,2-Trichloroethane	ND	9.4	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Trichloroethene (TCE)	ND	10	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Trichlorofluoromethane	ND	4.6	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
1,2,3-Trichloropropane	ND	22	100		µg/L	50	6/25/2021 7:20:24 PM	B79410
Vinyl chloride	ND	9.8	50		µg/L	50	6/25/2021 7:20:24 PM	B79410
Xylenes, Total	770	28	75		µg/L	50	6/25/2021 7:20:24 PM	B79410
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	50	6/25/2021 7:20:24 PM	B79410
Surr: 4-Bromofluorobenzene	111	0	70-130		%Rec	50	6/25/2021 7:20:24 PM	B79410
Surr: Dibromofluoromethane	98.1	0	70-130		%Rec	50	6/25/2021 7:20:24 PM	B79410
Surr: Toluene-d8	101	0	70-130		%Rec	50	6/25/2021 7:20:24 PM	B79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	23	1.4	2.5		mg/L	50	6/25/2021 7:20:24 PM	GW794
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	50	6/25/2021 7:20:24 PM	GW794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:20:00 AM
Lab ID: 2106C55-003B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.4	0.016	0.064		mg/L	1	6/30/2021 2:38:00 PM	60947
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/30/2021 2:38:00 PM	60947
Surr: DNOP	77.8	0	15-142		%Rec	1	6/30/2021 2:38:00 PM	60947

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:20:00 AM
Lab ID: 2106C55-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	6/29/2021 9:04:15 PM	60990

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:20:00 AM
Lab ID: 2106C55-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/24/2021 1:38:45 PM	R79334
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	6/24/2021 1:38:45 PM	R79334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:20:00 AM
Lab ID: 2106C55-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	2.1	0.037	0.10	*	mg/L	5	6/30/2021 11:34:50 AM	61019
Barium	0.80	0.0082	0.015		mg/L	5	6/30/2021 11:34:50 AM	61019
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2021 11:30:51 AM	61019
Boron	0.47	0.0074	0.040		mg/L	1	6/30/2021 11:30:51 AM	61019
Cadmium	ND	0.0015	0.0020		mg/L	1	6/30/2021 11:30:51 AM	61019
Chromium	ND	0.0021	0.0060		mg/L	1	6/30/2021 11:30:51 AM	61019
Cobalt	ND	0.0024	0.0060		mg/L	1	6/30/2021 11:30:51 AM	61019
Copper	ND	0.0047	0.0060		mg/L	1	6/30/2021 11:30:51 AM	61019
Iron	4.7	0.064	0.25	*	mg/L	5	6/30/2021 11:34:50 AM	61019
Manganese	1.2	0.0041	0.010	*	mg/L	5	6/30/2021 11:34:50 AM	61019
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/30/2021 11:30:51 AM	61019
Nickel	0.030	0.0033	0.010		mg/L	1	6/30/2021 11:30:51 AM	61019
Silver	ND	0.0013	0.0050		mg/L	1	6/30/2021 11:30:51 AM	61019
Zinc	ND	0.0064	0.010		mg/L	1	6/30/2021 11:30:51 AM	61019
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/2/2021 12:45:04 PM	61019
Arsenic	0.0043	0.00013	0.0010		mg/L	1	7/2/2021 12:45:04 PM	61019
Lead	0.0027	0.000061	0.00050		mg/L	1	7/2/2021 12:45:04 PM	61019
Selenium	0.00047	0.00037	0.0010	J	mg/L	1	7/2/2021 12:45:04 PM	61019
Thallium	ND	0.00025	0.00025		mg/L	1	7/2/2021 12:45:04 PM	61019
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/30/2021 1:43:10 PM	61000

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58A
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:20:00 AM
Lab ID: 2106C55-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/28/2021 10:39:06 AM	A79403
Barium	0.76	0.0011	0.0020		mg/L	1	6/28/2021 10:39:06 AM	A79403
Beryllium	ND	0.00088	0.0020		mg/L	1	6/28/2021 10:39:06 AM	A79403
Boron	0.49	0.0067	0.040		mg/L	1	6/28/2021 10:39:06 AM	A79403
Cadmium	ND	0.0012	0.0020		mg/L	1	6/28/2021 10:39:06 AM	A79403
Chromium	ND	0.0020	0.0060		mg/L	1	6/28/2021 10:39:06 AM	A79403
Cobalt	ND	0.0024	0.0060		mg/L	1	6/28/2021 10:39:06 AM	A79403
Copper	ND	0.0035	0.0060		mg/L	1	6/28/2021 10:39:06 AM	A79403
Iron	3.5	0.052	0.10	*	mg/L	5	6/28/2021 10:40:26 AM	A79403
Manganese	1.3	0.0029	0.010	*	mg/L	5	6/28/2021 10:40:26 AM	A79403
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/28/2021 10:39:06 AM	A79403
Nickel	0.031	0.0033	0.010		mg/L	1	6/28/2021 10:39:06 AM	A79403
Silver	ND	0.0013	0.0050		mg/L	1	6/28/2021 10:39:06 AM	A79403
Zinc	0.013	0.0060	0.010		mg/L	1	6/28/2021 10:39:06 AM	A79403
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00046	0.00044	0.0010	J	mg/L	1	7/1/2021 3:48:25 PM	B79527
Arsenic	0.0044	0.00012	0.0010		mg/L	1	7/1/2021 3:48:25 PM	B79527
Lead	0.0011	0.00028	0.0025	J	mg/L	5	7/1/2021 6:59:09 PM	B79527
Selenium	0.00042	0.00034	0.0010	J	mg/L	1	7/1/2021 3:48:25 PM	B79527
Thallium	ND	0.0012	0.0012		mg/L	5	7/1/2021 6:59:09 PM	B79527
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00061	0.0010		mg/L	5	7/7/2021 5:09:38 PM	61150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:40:00 AM
Lab ID: 2106C55-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	33000	230	1000		µg/L	1E+	6/25/2021 7:47:37 PM	B79410
Toluene	85	20	100	J	µg/L	100	6/25/2021 8:14:55 PM	B79410
Ethylbenzene	1200	21	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Methyl tert-butyl ether (MTBE)	1800	39	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,2,4-Trimethylbenzene	14	12	100	J	µg/L	100	6/25/2021 8:14:55 PM	B79410
1,3,5-Trimethylbenzene	ND	18	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,2-Dichloroethane (EDC)	ND	22	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,2-Dibromoethane (EDB)	ND	30	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Naphthalene	200	28	200	J	µg/L	100	6/25/2021 8:14:55 PM	B79410
1-Methylnaphthalene	ND	84	400		µg/L	100	6/25/2021 8:14:55 PM	B79410
2-Methylnaphthalene	ND	69	400		µg/L	100	6/25/2021 8:14:55 PM	B79410
Acetone	750	230	1000	J	µg/L	100	6/25/2021 8:14:55 PM	B79410
Bromobenzene	ND	28	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Bromodichloromethane	ND	20	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Bromoform	ND	31	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Bromomethane	ND	160	300		µg/L	100	6/25/2021 8:14:55 PM	B79410
2-Butanone	ND	110	1000		µg/L	100	6/25/2021 8:14:55 PM	B79410
Carbon disulfide	ND	44	1000		µg/L	100	6/25/2021 8:14:55 PM	B79410
Carbon Tetrachloride	ND	18	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Chlorobenzene	ND	14	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Chloroethane	ND	38	200		µg/L	100	6/25/2021 8:14:55 PM	B79410
Chloroform	ND	13	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Chloromethane	ND	40	300		µg/L	100	6/25/2021 8:14:55 PM	B79410
2-Chlorotoluene	ND	13	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
4-Chlorotoluene	ND	51	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
cis-1,2-DCE	ND	39	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
cis-1,3-Dichloropropene	ND	36	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,2-Dibromo-3-chloropropane	ND	59	200		µg/L	100	6/25/2021 8:14:55 PM	B79410
Dibromochloromethane	ND	28	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Dibromomethane	ND	31	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,2-Dichlorobenzene	ND	15	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,3-Dichlorobenzene	ND	16	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,4-Dichlorobenzene	ND	21	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Dichlorodifluoromethane	ND	44	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,1-Dichloroethane	ND	27	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,1-Dichloroethene	ND	13	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,2-Dichloropropane	ND	13	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,3-Dichloropropane	ND	18	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
2,2-Dichloropropane	ND	26	200		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,1-Dichloropropene	ND	18	100		µg/L	100	6/25/2021 8:14:55 PM	B79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:40:00 AM
Lab ID: 2106C55-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	33	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
2-Hexanone	ND	180	1000		µg/L	100	6/25/2021 8:14:55 PM	B79410
Isopropylbenzene	32	18	100	J	µg/L	100	6/25/2021 8:14:55 PM	B79410
4-Isopropyltoluene	ND	20	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
4-Methyl-2-pentanone	120	110	1000	J	µg/L	100	6/25/2021 8:14:55 PM	B79410
Methylene Chloride	ND	40	300		µg/L	100	6/25/2021 8:14:55 PM	B79410
n-Butylbenzene	ND	25	300		µg/L	100	6/25/2021 8:14:55 PM	B79410
n-Propylbenzene	82	18	100	J	µg/L	100	6/25/2021 8:14:55 PM	B79410
sec-Butylbenzene	ND	61	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Styrene	ND	13	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
tert-Butylbenzene	ND	24	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,1,1,2-Tetrachloroethane	ND	27	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,1,2,2-Tetrachloroethane	ND	27	200		µg/L	100	6/25/2021 8:14:55 PM	B79410
Tetrachloroethene (PCE)	ND	36	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
trans-1,2-DCE	ND	49	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
trans-1,3-Dichloropropene	ND	34	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,2,3-Trichlorobenzene	ND	13	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,2,4-Trichlorobenzene	ND	24	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,1,1-Trichloroethane	ND	30	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,1,2-Trichloroethane	ND	19	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Trichloroethene (TCE)	ND	20	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Trichlorofluoromethane	ND	9.2	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
1,2,3-Trichloropropane	ND	44	200		µg/L	100	6/25/2021 8:14:55 PM	B79410
Vinyl chloride	ND	20	100		µg/L	100	6/25/2021 8:14:55 PM	B79410
Xylenes, Total	190	55	150		µg/L	100	6/25/2021 8:14:55 PM	B79410
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	100	6/25/2021 8:14:55 PM	B79410
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	100	6/25/2021 8:14:55 PM	B79410
Surr: Dibromofluoromethane	98.9	0	70-130		%Rec	100	6/25/2021 8:14:55 PM	B79410
Surr: Toluene-d8	101	0	70-130		%Rec	100	6/25/2021 8:14:55 PM	B79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	73	2.8	5.0		mg/L	100	6/25/2021 8:14:55 PM	GW794
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	100	6/25/2021 8:14:55 PM	GW794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:40:00 AM
Lab ID: 2106C55-004B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	5.7	0.032	0.13		mg/L	2	7/1/2021 12:46:37 PM	60947
Motor Oil Range Organics (MRO)	ND	0.10	0.16	D	mg/L	2	7/1/2021 12:46:37 PM	60947
Surr: DNOP	96.4	0	15-142		%Rec	2	7/1/2021 12:46:37 PM	60947

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:40:00 AM
Lab ID: 2106C55-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	6/29/2021 9:19:21 PM	60990

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:40:00 AM
Lab ID: 2106C55-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/24/2021 2:04:31 PM	R79334
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	6/24/2021 2:04:31 PM	R79334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:40:00 AM
Lab ID: 2106C55-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.94	0.0074	0.020	*	mg/L	1	6/30/2021 11:38:58 AM	61019
Barium	4.5	0.016	0.030	*	mg/L	10	6/30/2021 11:41:40 AM	61019
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2021 11:38:58 AM	61019
Boron	0.35	0.0074	0.040		mg/L	1	6/30/2021 11:38:58 AM	61019
Cadmium	ND	0.0015	0.0020		mg/L	1	6/30/2021 11:38:58 AM	61019
Chromium	ND	0.0021	0.0060		mg/L	1	6/30/2021 11:38:58 AM	61019
Cobalt	0.0025	0.0024	0.0060	J	mg/L	1	6/30/2021 11:38:58 AM	61019
Copper	ND	0.0047	0.0060		mg/L	1	6/30/2021 11:38:58 AM	61019
Iron	9.9	0.13	0.50	*	mg/L	10	6/30/2021 11:41:40 AM	61019
Manganese	1.8	0.0081	0.020	*	mg/L	10	6/30/2021 11:41:40 AM	61019
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/30/2021 11:38:58 AM	61019
Nickel	0.037	0.0033	0.010		mg/L	1	6/30/2021 11:38:58 AM	61019
Silver	ND	0.0013	0.0050		mg/L	1	6/30/2021 11:38:58 AM	61019
Zinc	ND	0.0064	0.010		mg/L	1	6/30/2021 11:38:58 AM	61019
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/2/2021 12:47:29 PM	61019
Arsenic	0.0042	0.00013	0.0010		mg/L	1	7/2/2021 12:47:29 PM	61019
Lead	0.00034	0.000061	0.00050	J	mg/L	1	7/2/2021 12:47:29 PM	61019
Selenium	ND	0.00037	0.0010		mg/L	1	7/2/2021 12:47:29 PM	61019
Thallium	ND	0.00025	0.00025		mg/L	1	7/2/2021 12:47:29 PM	61019
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/30/2021 1:45:35 PM	61000

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-58
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:40:00 AM
Lab ID: 2106C55-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/28/2021 10:42:02 AM	A79403
Barium	4.6	0.0056	0.010	*	mg/L	5	6/28/2021 10:43:24 AM	A79403
Beryllium	ND	0.00088	0.0020		mg/L	1	6/28/2021 10:42:02 AM	A79403
Boron	0.35	0.0067	0.040		mg/L	1	6/28/2021 10:42:02 AM	A79403
Cadmium	ND	0.0012	0.0020		mg/L	1	6/28/2021 10:42:02 AM	A79403
Chromium	ND	0.0020	0.0060		mg/L	1	6/28/2021 10:42:02 AM	A79403
Cobalt	ND	0.0024	0.0060		mg/L	1	6/28/2021 10:42:02 AM	A79403
Copper	ND	0.0035	0.0060		mg/L	1	6/28/2021 10:42:02 AM	A79403
Iron	9.5	0.21	0.40	*	mg/L	20	6/28/2021 11:52:44 AM	B79403
Manganese	1.8	0.0029	0.010	*	mg/L	5	6/28/2021 10:43:24 AM	A79403
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/28/2021 10:42:02 AM	A79403
Nickel	0.036	0.0033	0.010		mg/L	1	6/28/2021 10:42:02 AM	A79403
Silver	ND	0.0013	0.0050		mg/L	1	6/28/2021 10:42:02 AM	A79403
Zinc	ND	0.0060	0.010		mg/L	1	6/28/2021 10:42:02 AM	A79403
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2021 3:53:09 PM	B79527
Arsenic	0.0036	0.00012	0.0010		mg/L	1	7/1/2021 3:53:09 PM	B79527
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2021 3:53:09 PM	B79527
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2021 3:53:09 PM	B79527
Thallium	ND	0.00025	0.00025		mg/L	1	7/1/2021 3:53:09 PM	B79527
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/7/2021 4:29:03 PM	61150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:50:00 AM
Lab ID: 2106C55-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	13000	110	500		µg/L	500	6/25/2021 8:42:15 PM	B79410
Toluene	42	10	50	J	µg/L	50	6/25/2021 9:09:25 PM	B79410
Ethylbenzene	570	11	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Methyl tert-butyl ether (MTBE)	83	20	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,2-Dichloroethane (EDC)	ND	11	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,2-Dibromoethane (EDB)	ND	15	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Naphthalene	170	14	100		µg/L	50	6/25/2021 9:09:25 PM	B79410
1-Methylnaphthalene	99	42	200	J	µg/L	50	6/25/2021 9:09:25 PM	B79410
2-Methylnaphthalene	69	35	200	J	µg/L	50	6/25/2021 9:09:25 PM	B79410
Acetone	480	120	500	J	µg/L	50	6/25/2021 9:09:25 PM	B79410
Bromobenzene	ND	14	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Bromodichloromethane	ND	10	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Bromoform	ND	16	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Bromomethane	ND	78	150		µg/L	50	6/25/2021 9:09:25 PM	B79410
2-Butanone	91	56	500	J	µg/L	50	6/25/2021 9:09:25 PM	B79410
Carbon disulfide	ND	22	500		µg/L	50	6/25/2021 9:09:25 PM	B79410
Carbon Tetrachloride	ND	8.8	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Chlorobenzene	ND	6.8	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Chloroethane	ND	19	100		µg/L	50	6/25/2021 9:09:25 PM	B79410
Chloroform	ND	6.7	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Chloromethane	22	20	150	J	µg/L	50	6/25/2021 9:09:25 PM	B79410
2-Chlorotoluene	ND	6.6	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
4-Chlorotoluene	ND	26	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
cis-1,2-DCE	ND	19	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
cis-1,3-Dichloropropene	ND	18	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,2-Dibromo-3-chloropropane	ND	29	100		µg/L	50	6/25/2021 9:09:25 PM	B79410
Dibromochloromethane	ND	14	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Dibromomethane	ND	15	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,2-Dichlorobenzene	ND	7.7	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,3-Dichlorobenzene	ND	8.1	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,4-Dichlorobenzene	ND	10	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Dichlorodifluoromethane	ND	22	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,1-Dichloroethane	ND	14	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,1-Dichloroethene	ND	6.5	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,2-Dichloropropane	ND	6.7	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,3-Dichloropropane	ND	9.0	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
2,2-Dichloropropane	ND	13	100		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,1-Dichloropropene	ND	9.0	50		µg/L	50	6/25/2021 9:09:25 PM	B79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:50:00 AM
Lab ID: 2106C55-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	16	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
2-Hexanone	ND	90	500		µg/L	50	6/25/2021 9:09:25 PM	B79410
Isopropylbenzene	15	9.1	50	J	µg/L	50	6/25/2021 9:09:25 PM	B79410
4-Isopropyltoluene	ND	10	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
4-Methyl-2-pentanone	ND	56	500		µg/L	50	6/25/2021 9:09:25 PM	B79410
Methylene Chloride	ND	20	150		µg/L	50	6/25/2021 9:09:25 PM	B79410
n-Butylbenzene	ND	13	150		µg/L	50	6/25/2021 9:09:25 PM	B79410
n-Propylbenzene	33	9.1	50	J	µg/L	50	6/25/2021 9:09:25 PM	B79410
sec-Butylbenzene	ND	30	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Styrene	ND	6.5	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
tert-Butylbenzene	ND	12	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,1,1,2-Tetrachloroethane	ND	13	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,1,2,2-Tetrachloroethane	ND	14	100		µg/L	50	6/25/2021 9:09:25 PM	B79410
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
trans-1,2-DCE	ND	24	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
trans-1,3-Dichloropropene	ND	17	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,2,3-Trichlorobenzene	ND	6.7	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,2,4-Trichlorobenzene	ND	12	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,1,1-Trichloroethane	ND	15	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,1,2-Trichloroethane	ND	9.4	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Trichloroethene (TCE)	ND	10	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Trichlorofluoromethane	ND	4.6	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
1,2,3-Trichloropropane	ND	22	100		µg/L	50	6/25/2021 9:09:25 PM	B79410
Vinyl chloride	ND	9.8	50		µg/L	50	6/25/2021 9:09:25 PM	B79410
Xylenes, Total	150	28	75		µg/L	50	6/25/2021 9:09:25 PM	B79410
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	50	6/25/2021 9:09:25 PM	B79410
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	50	6/25/2021 9:09:25 PM	B79410
Surr: Dibromofluoromethane	106	0	70-130		%Rec	50	6/25/2021 9:09:25 PM	B79410
Surr: Toluene-d8	101	0	70-130		%Rec	50	6/25/2021 9:09:25 PM	B79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	31	1.4	2.5		mg/L	50	6/25/2021 9:09:25 PM	GW794
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	50	6/25/2021 9:09:25 PM	GW794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:50:00 AM
Lab ID: 2106C55-005B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	3.6	0.16	0.64		mg/L	10	6/30/2021 1:50:33 PM	60947
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	6/30/2021 1:50:33 PM	60947
Surr: DNOP	0	0	15-142	S	%Rec	10	6/30/2021 1:50:33 PM	60947

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:50:00 AM
Lab ID: 2106C55-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	6/29/2021 9:34:24 PM	60990

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:50:00 AM
Lab ID: 2106C55-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/24/2021 2:30:17 PM	R79334
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	6/24/2021 2:30:17 PM	R79334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:50:00 AM
Lab ID: 2106C55-005E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	5.7	0.074	0.20	*	mg/L	10	6/30/2021 12:01:57 PM	61019
Barium	4.2	0.016	0.030	*	mg/L	10	6/30/2021 1:35:26 PM	61019
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2021 1:34:09 PM	61019
Boron	0.29	0.0074	0.040		mg/L	1	6/30/2021 1:34:09 PM	61019
Cadmium	ND	0.0015	0.0020		mg/L	1	6/30/2021 1:34:09 PM	61019
Chromium	ND	0.0021	0.0060		mg/L	1	6/30/2021 1:34:09 PM	61019
Cobalt	0.0043	0.0024	0.0060	J	mg/L	1	6/30/2021 1:34:09 PM	61019
Copper	ND	0.0047	0.0060		mg/L	1	6/30/2021 1:34:09 PM	61019
Iron	9.0	0.13	0.50	*	mg/L	10	6/30/2021 1:35:26 PM	61019
Manganese	2.5	0.0081	0.020	*	mg/L	10	6/30/2021 1:35:26 PM	61019
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/30/2021 1:34:09 PM	61019
Nickel	0.070	0.0033	0.010		mg/L	1	6/30/2021 1:34:09 PM	61019
Silver	ND	0.0013	0.0050		mg/L	1	6/30/2021 1:34:09 PM	61019
Zinc	0.0070	0.0064	0.010	J	mg/L	1	6/30/2021 1:34:09 PM	61019
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/2/2021 12:49:54 PM	61019
Arsenic	0.0040	0.00013	0.0010		mg/L	1	7/2/2021 12:49:54 PM	61019
Lead	0.0024	0.000061	0.00050		mg/L	1	7/2/2021 12:49:54 PM	61019
Selenium	0.00081	0.00037	0.0010	J	mg/L	1	7/2/2021 12:49:54 PM	61019
Thallium	ND	0.00025	0.00025		mg/L	1	7/2/2021 12:49:54 PM	61019
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/30/2021 1:48:01 PM	61000

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-57
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 10:50:00 AM
Lab ID: 2106C55-005F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.46	0.0056	0.020	*	mg/L	1	6/28/2021 10:44:45 AM	A79403
Barium	3.6	0.0056	0.010	*	mg/L	5	6/28/2021 10:46:04 AM	A79403
Beryllium	ND	0.00088	0.0020		mg/L	1	6/28/2021 10:44:45 AM	A79403
Boron	0.27	0.0067	0.040		mg/L	1	6/28/2021 10:44:45 AM	A79403
Cadmium	ND	0.0012	0.0020		mg/L	1	6/28/2021 10:44:45 AM	A79403
Chromium	ND	0.0020	0.0060		mg/L	1	6/28/2021 10:44:45 AM	A79403
Cobalt	0.0027	0.0024	0.0060	J	mg/L	1	6/28/2021 10:44:45 AM	A79403
Copper	ND	0.0035	0.0060		mg/L	1	6/28/2021 10:44:45 AM	A79403
Iron	4.8	0.052	0.10	*	mg/L	5	6/28/2021 10:46:04 AM	A79403
Manganese	2.1	0.0029	0.010	*	mg/L	5	6/28/2021 10:46:04 AM	A79403
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/28/2021 10:44:45 AM	A79403
Nickel	0.062	0.0033	0.010		mg/L	1	6/28/2021 10:44:45 AM	A79403
Silver	ND	0.0013	0.0050		mg/L	1	6/28/2021 10:44:45 AM	A79403
Zinc	0.015	0.0060	0.010		mg/L	1	6/28/2021 10:44:45 AM	A79403
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2021 4:02:37 PM	B79527
Arsenic	0.0033	0.00012	0.0010		mg/L	1	7/1/2021 4:02:37 PM	B79527
Lead	0.00061	0.000057	0.00050		mg/L	1	7/1/2021 4:02:37 PM	B79527
Selenium	0.00043	0.00034	0.0010	J	mg/L	1	7/1/2021 4:02:37 PM	B79527
Thallium	ND	0.00025	0.00025		mg/L	1	7/1/2021 4:02:37 PM	B79527
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/7/2021 4:31:25 PM	61150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:10:00 AM
Lab ID: 2106C55-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.53	0.23	1.0	J	µg/L	1	6/25/2021 9:36:43 PM	B79410
Toluene	ND	0.20	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Naphthalene	ND	0.28	2.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Acetone	ND	2.3	10		µg/L	1	6/25/2021 9:36:43 PM	B79410
Bromobenzene	ND	0.28	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Bromoform	ND	0.31	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Bromomethane	ND	1.6	3.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
2-Butanone	ND	1.1	10		µg/L	1	6/25/2021 9:36:43 PM	B79410
Carbon disulfide	ND	0.44	10		µg/L	1	6/25/2021 9:36:43 PM	B79410
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Chloroethane	ND	0.38	2.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Chloroform	0.53	0.13	1.0	J	µg/L	1	6/25/2021 9:36:43 PM	B79410
Chloromethane	ND	0.40	3.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Dibromomethane	ND	0.31	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:10:00 AM
Lab ID: 2106C55-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
2-Hexanone	ND	1.8	10		µg/L	1	6/25/2021 9:36:43 PM	B79410
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/25/2021 9:36:43 PM	B79410
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Styrene	ND	0.13	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Tetrachloroethene (PCE)	0.45	0.36	1.0	J	µg/L	1	6/25/2021 9:36:43 PM	B79410
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/25/2021 9:36:43 PM	B79410
Xylenes, Total	ND	0.55	1.5		µg/L	1	6/25/2021 9:36:43 PM	B79410
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	6/25/2021 9:36:43 PM	B79410
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	6/25/2021 9:36:43 PM	B79410
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	6/25/2021 9:36:43 PM	B79410
Surr: Toluene-d8	98.4	0	70-130		%Rec	1	6/25/2021 9:36:43 PM	B79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.028	0.028	0.050	J	mg/L	1	6/25/2021 9:36:43 PM	GW794
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	6/25/2021 9:36:43 PM	GW794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:10:00 AM
Lab ID: 2106C55-006B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.032	0.016	0.064	J	mg/L	1	6/30/2021 5:24:06 PM	60947
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/30/2021 5:24:06 PM	60947
Surr: DNOP	93.1	0	15-142		%Rec	1	6/30/2021 5:24:06 PM	60947

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:10:00 AM
Lab ID: 2106C55-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Azobenzene	ND	0.55	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Benzoic acid	ND	1.1	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Benzyl alcohol	ND	0.68	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Bis(2-ethylhexyl)phthalate	4.8	4.5	10	J	µg/L	1	7/7/2021 5:38:15 PM	60957
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Carbazole	ND	0.56	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
4-Chloroaniline	ND	0.53	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
2-Chlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	7/7/2021 5:38:15 PM	60957
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	7/7/2021 5:38:15 PM	60957
Dibenzofuran	ND	0.38	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Diethyl phthalate	ND	3.9	10		µg/L	1	7/7/2021 5:38:15 PM	60957
Dimethyl phthalate	ND	2.0	10		µg/L	1	7/7/2021 5:38:15 PM	60957
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Hexachloroethane	ND	0.45	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Isophorone	ND	0.40	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
2-Methylphenol	ND	0.51	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:10:00 AM
Lab ID: 2106C55-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
2-Nitroaniline	ND	0.31	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
3-Nitroaniline	ND	1.6	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
4-Nitroaniline	ND	0.47	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Nitrobenzene	ND	0.51	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
2-Nitrophenol	ND	0.47	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
4-Nitrophenol	ND	0.28	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Pentachlorophenol	ND	0.59	20		µg/L	1	7/7/2021 5:38:15 PM	60957
Phenol	ND	0.33	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Pyridine	ND	0.93	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	7/7/2021 5:38:15 PM	60957
Surr: 2-Fluorophenol	52.6	0	15-88.8		%Rec	1	7/7/2021 5:38:15 PM	60957
Surr: Phenol-d5	40.9	0	15-71.9		%Rec	1	7/7/2021 5:38:15 PM	60957
Surr: 2,4,6-Tribromophenol	69.1	0	15-97.4		%Rec	1	7/7/2021 5:38:15 PM	60957
Surr: Nitrobenzene-d5	61.5	0	15-117		%Rec	1	7/7/2021 5:38:15 PM	60957
Surr: 2-Fluorobiphenyl	63.3	0	15-100		%Rec	1	7/7/2021 5:38:15 PM	60957
Surr: 4-Terphenyl-d14	99.9	0	15-120		%Rec	1	7/7/2021 5:38:15 PM	60957
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.52	0.048	1.0	J	µg/L	1	7/7/2021 1:26:00 PM	60905
Naphthalene	ND	0.034	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
Acenaphthylene	ND	0.043	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
Acenaphthene	ND	0.031	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
Fluorene	ND	0.031	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
Phenanthrene	ND	0.057	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
Anthracene	ND	0.034	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
Fluoranthene	ND	0.10	0.20		µg/L	1	7/7/2021 1:26:00 PM	60905
Pyrene	ND	0.16	0.20		µg/L	1	7/7/2021 1:26:00 PM	60905
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
Chrysene	ND	0.024	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	7/7/2021 1:26:00 PM	60905
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	7/7/2021 1:26:00 PM	60905
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	7/7/2021 1:26:00 PM	60905
Surr: Nitrobenzene-d5	60.5	0	26.3-112		%Rec	1	7/7/2021 1:26:00 PM	60905

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:10:00 AM
Lab ID: 2106C55-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 2-Fluorobiphenyl	54.5	0	21.1-110		%Rec	1	7/7/2021 1:26:00 PM	60905
Surr: 4-Terphenyl-d14	95.5	0	17.6-167		%Rec	1	7/7/2021 1:26:00 PM	60905

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Qualifiers:

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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:10:00 AM
Lab ID: 2106C55-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.94	0.28	0.50		mg/L	5	6/24/2021 3:21:49 PM	R79334
Chloride	320	5.0	10	*	mg/L	20	6/24/2021 3:34:41 PM	R79334
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/24/2021 3:21:49 PM	R79334
Bromide	0.64	0.25	0.50		mg/L	5	6/24/2021 3:21:49 PM	R79334
Nitrogen, Nitrate (As N)	6.2	0.10	0.50		mg/L	5	6/24/2021 3:21:49 PM	R79334
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/24/2021 3:21:49 PM	R79334
Sulfate	520	5.0	10	*	mg/L	20	6/24/2021 3:34:41 PM	R79334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:10:00 AM
Lab ID: 2106C55-006E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	2.3	0.037	0.10	*	mg/L	5	6/30/2021 11:53:27 AM	61019
Barium	0.059	0.0016	0.0030		mg/L	1	6/30/2021 1:36:49 PM	61019
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2021 1:36:49 PM	61019
Boron	0.48	0.0074	0.040		mg/L	1	6/30/2021 1:36:49 PM	61019
Cadmium	ND	0.0015	0.0020		mg/L	1	6/30/2021 1:36:49 PM	61019
Calcium	200	0.57	5.0		mg/L	5	6/30/2021 1:38:24 PM	61019
Chromium	ND	0.0021	0.0060		mg/L	1	6/30/2021 1:36:49 PM	61019
Cobalt	0.0041	0.0024	0.0060	J	mg/L	1	6/30/2021 1:36:49 PM	61019
Copper	ND	0.0047	0.0060		mg/L	1	6/30/2021 1:36:49 PM	61019
Iron	0.76	0.013	0.050	*	mg/L	1	6/30/2021 1:36:49 PM	61019
Magnesium	39	0.067	1.0		mg/L	1	6/30/2021 1:36:49 PM	61019
Manganese	0.48	0.00081	0.0020	*	mg/L	1	6/30/2021 1:36:49 PM	61019
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/30/2021 1:36:49 PM	61019
Nickel	ND	0.0033	0.010		mg/L	1	6/30/2021 1:36:49 PM	61019
Potassium	0.76	0.16	1.0	J	mg/L	1	6/30/2021 11:51:50 AM	61019
Silver	ND	0.0013	0.0050		mg/L	1	6/30/2021 1:36:49 PM	61019
Sodium	330	0.93	5.0		mg/L	5	6/30/2021 1:38:24 PM	61019
Zinc	ND	0.0064	0.010		mg/L	1	6/30/2021 1:36:49 PM	61019
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/2/2021 12:52:20 PM	61019
Arsenic	0.00073	0.00013	0.0010	J	mg/L	1	7/2/2021 12:52:20 PM	61019
Lead	0.00052	0.000061	0.00050		mg/L	1	7/2/2021 12:52:20 PM	61019
Selenium	0.0048	0.00037	0.0010		mg/L	1	7/2/2021 12:52:20 PM	61019
Thallium	ND	0.00025	0.00025		mg/L	1	7/2/2021 12:52:20 PM	61019
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/30/2021 1:50:25 PM	61000

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:10:00 AM
Lab ID: 2106C55-006F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.080	0.0056	0.020		mg/L	1	6/28/2021 10:47:24 AM	A79403
Barium	0.026	0.0011	0.0020		mg/L	1	6/28/2021 10:47:24 AM	A79403
Beryllium	ND	0.00088	0.0020		mg/L	1	6/28/2021 10:47:24 AM	A79403
Boron	0.45	0.0067	0.040		mg/L	1	6/28/2021 10:47:24 AM	A79403
Cadmium	ND	0.0012	0.0020		mg/L	1	6/28/2021 10:47:24 AM	A79403
Chromium	ND	0.0020	0.0060		mg/L	1	6/28/2021 10:47:24 AM	A79403
Cobalt	0.0030	0.0024	0.0060	J	mg/L	1	6/28/2021 10:47:24 AM	A79403
Copper	ND	0.0035	0.0060		mg/L	1	6/28/2021 10:47:24 AM	A79403
Iron	0.033	0.010	0.020		mg/L	1	6/28/2021 10:47:24 AM	A79403
Manganese	0.14	0.00058	0.0020	*	mg/L	1	6/28/2021 10:47:24 AM	A79403
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/28/2021 10:47:24 AM	A79403
Nickel	ND	0.0033	0.010		mg/L	1	6/28/2021 10:47:24 AM	A79403
Silver	ND	0.0013	0.0050		mg/L	1	6/28/2021 10:47:24 AM	A79403
Zinc	0.011	0.0060	0.010		mg/L	1	6/28/2021 10:47:24 AM	A79403
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2021 4:07:21 PM	B79527
Arsenic	0.00060	0.00012	0.0010	J	mg/L	1	7/1/2021 4:07:21 PM	B79527
Lead	0.000097	0.000057	0.00050	J	mg/L	1	7/1/2021 4:07:21 PM	B79527
Selenium	0.0043	0.00034	0.0010		mg/L	1	7/1/2021 4:07:21 PM	B79527
Thallium	ND	0.00025	0.00025		mg/L	1	7/1/2021 4:07:21 PM	B79527
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/7/2021 4:33:47 PM	61150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:30:00 AM
Lab ID: 2106C55-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	720	11	50		µg/L	50	6/25/2021 10:03:52 PM	B79410
Toluene	1.5	1.0	5.0	J	µg/L	5	6/25/2021 10:31:09 PM	B79410
Ethylbenzene	1.5	1.1	5.0	J	µg/L	5	6/25/2021 10:31:09 PM	B79410
Methyl tert-butyl ether (MTBE)	110	2.0	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,2,4-Trimethylbenzene	ND	0.61	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,2-Dichloroethane (EDC)	ND	1.1	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,2-Dibromoethane (EDB)	ND	1.5	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
Naphthalene	17	1.4	10		µg/L	5	6/25/2021 10:31:09 PM	B79410
1-Methylnaphthalene	87	4.2	20		µg/L	5	6/25/2021 10:31:09 PM	B79410
2-Methylnaphthalene	21	3.5	20		µg/L	5	6/25/2021 10:31:09 PM	B79410
Acetone	ND	12	50		µg/L	5	6/25/2021 10:31:09 PM	B79410
Bromobenzene	ND	1.4	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
Bromodichloromethane	ND	1.0	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
Bromoform	ND	1.6	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
Bromomethane	ND	7.8	15		µg/L	5	6/25/2021 10:31:09 PM	B79410
2-Butanone	13	5.6	50	J	µg/L	5	6/25/2021 10:31:09 PM	B79410
Carbon disulfide	ND	2.2	50		µg/L	5	6/25/2021 10:31:09 PM	B79410
Carbon Tetrachloride	ND	0.88	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
Chlorobenzene	ND	0.68	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
Chloroethane	ND	1.9	10		µg/L	5	6/25/2021 10:31:09 PM	B79410
Chloroform	ND	0.67	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
Chloromethane	ND	2.0	15		µg/L	5	6/25/2021 10:31:09 PM	B79410
2-Chlorotoluene	ND	0.66	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
4-Chlorotoluene	ND	2.6	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
cis-1,2-DCE	4.4	1.9	5.0	J	µg/L	5	6/25/2021 10:31:09 PM	B79410
cis-1,3-Dichloropropene	ND	1.8	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,2-Dibromo-3-chloropropane	ND	2.9	10		µg/L	5	6/25/2021 10:31:09 PM	B79410
Dibromochloromethane	ND	1.4	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
Dibromomethane	ND	1.5	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,2-Dichlorobenzene	ND	0.77	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,3-Dichlorobenzene	ND	0.81	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,4-Dichlorobenzene	ND	1.0	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
Dichlorodifluoromethane	ND	2.2	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,1-Dichloroethane	ND	1.4	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,1-Dichloroethene	ND	0.65	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,2-Dichloropropane	ND	0.67	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,3-Dichloropropane	ND	0.90	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
2,2-Dichloropropane	ND	1.3	10		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,1-Dichloropropene	ND	0.90	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:30:00 AM
Lab ID: 2106C55-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	1.6	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
2-Hexanone	ND	9.0	50		µg/L	5	6/25/2021 10:31:09 PM	B79410
Isopropylbenzene	2.1	0.91	5.0	J	µg/L	5	6/25/2021 10:31:09 PM	B79410
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
4-Methyl-2-pentanone	ND	5.6	50		µg/L	5	6/25/2021 10:31:09 PM	B79410
Methylene Chloride	ND	2.0	15		µg/L	5	6/25/2021 10:31:09 PM	B79410
n-Butylbenzene	1.6	1.3	15	J	µg/L	5	6/25/2021 10:31:09 PM	B79410
n-Propylbenzene	1.9	0.91	5.0	J	µg/L	5	6/25/2021 10:31:09 PM	B79410
sec-Butylbenzene	ND	3.0	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
Styrene	ND	0.65	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
tert-Butylbenzene	ND	1.2	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,1,1,2-Tetrachloroethane	ND	1.3	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,1,2,2-Tetrachloroethane	4.8	1.4	10	J	µg/L	5	6/25/2021 10:31:09 PM	B79410
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
trans-1,2-DCE	ND	2.4	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
trans-1,3-Dichloropropene	ND	1.7	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,2,3-Trichlorobenzene	ND	0.67	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,2,4-Trichlorobenzene	ND	1.2	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,1,2-Trichloroethane	ND	0.94	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
Trichlorofluoromethane	ND	0.46	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
1,2,3-Trichloropropane	ND	2.2	10		µg/L	5	6/25/2021 10:31:09 PM	B79410
Vinyl chloride	ND	0.98	5.0		µg/L	5	6/25/2021 10:31:09 PM	B79410
Xylenes, Total	2.9	2.8	7.5	J	µg/L	5	6/25/2021 10:31:09 PM	B79410
Surr: 1,2-Dichloroethane-d4	99.1	0	70-130		%Rec	5	6/25/2021 10:31:09 PM	B79410
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	5	6/25/2021 10:31:09 PM	B79410
Surr: Dibromofluoromethane	96.5	0	70-130		%Rec	5	6/25/2021 10:31:09 PM	B79410
Surr: Toluene-d8	98.3	0	70-130		%Rec	5	6/25/2021 10:31:09 PM	B79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	1.9	0.14	0.25		mg/L	5	6/25/2021 10:31:09 PM	GW794
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	5	6/25/2021 10:31:09 PM	GW794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:30:00 AM
Lab ID: 2106C55-007B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.5	0.016	0.064		mg/L	1	6/30/2021 3:01:47 PM	60947
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/30/2021 3:01:47 PM	60947
Surr: DNOP	94.6	0	15-142		%Rec	1	6/30/2021 3:01:47 PM	60947

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:30:00 AM
Lab ID: 2106C55-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	6/29/2021 9:49:29 PM	60990

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:30:00 AM
Lab ID: 2106C55-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Azobenzene	ND	0.55	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Benzoic acid	ND	1.1	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Benzyl alcohol	ND	0.68	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Bis(2-ethylhexyl)phthalate	4.9	4.5	10	J	µg/L	1	7/7/2021 6:20:15 PM	60957
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Carbazole	ND	0.56	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
4-Chloroaniline	ND	0.53	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
2-Chlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	7/7/2021 6:20:15 PM	60957
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	7/7/2021 6:20:15 PM	60957
Dibenzofuran	4.4	0.38	5.0	J	µg/L	1	7/7/2021 6:20:15 PM	60957
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Diethyl phthalate	ND	3.9	10		µg/L	1	7/7/2021 6:20:15 PM	60957
Dimethyl phthalate	ND	2.0	10		µg/L	1	7/7/2021 6:20:15 PM	60957
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
2,4-Dimethylphenol	2.6	0.97	5.0	J	µg/L	1	7/7/2021 6:20:15 PM	60957
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Hexachloroethane	ND	0.45	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Isophorone	ND	0.40	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
2-Methylphenol	ND	0.51	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:30:00 AM
Lab ID: 2106C55-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
2-Nitroaniline	ND	0.31	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
3-Nitroaniline	ND	1.6	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
4-Nitroaniline	ND	0.47	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Nitrobenzene	ND	0.51	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
2-Nitrophenol	ND	0.47	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
4-Nitrophenol	ND	0.28	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Pentachlorophenol	ND	0.59	20		µg/L	1	7/7/2021 6:20:15 PM	60957
Phenol	8.5	0.33	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Pyridine	ND	0.93	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	7/7/2021 6:20:15 PM	60957
Surr: 2-Fluorophenol	52.1	0	15-88.8		%Rec	1	7/7/2021 6:20:15 PM	60957
Surr: Phenol-d5	42.6	0	15-71.9		%Rec	1	7/7/2021 6:20:15 PM	60957
Surr: 2,4,6-Tribromophenol	78.4	0	15-97.4		%Rec	1	7/7/2021 6:20:15 PM	60957
Surr: Nitrobenzene-d5	63.8	0	15-117		%Rec	1	7/7/2021 6:20:15 PM	60957
Surr: 2-Fluorobiphenyl	67.4	0	15-100		%Rec	1	7/7/2021 6:20:15 PM	60957
Surr: 4-Terphenyl-d14	96.1	0	15-120		%Rec	1	7/7/2021 6:20:15 PM	60957
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	7.2	0.034	0.10		µg/L	1	7/7/2021 2:10:00 PM	60905
1-Methylnaphthalene	38	0.48	2.0		µg/L	20	7/9/2021 5:16:00 AM	60905
2-Methylnaphthalene	9.7	0.034	0.10		µg/L	1	7/7/2021 2:10:00 PM	60905
Acenaphthylene	ND	0.043	0.10		µg/L	1	7/7/2021 2:10:00 PM	60905
Acenaphthene	3.8	0.031	0.10		µg/L	1	7/7/2021 2:10:00 PM	60905
Fluorene	4.0	0.031	0.10		µg/L	1	7/7/2021 2:10:00 PM	60905
Phenanthrene	2.7	0.057	0.10		µg/L	1	7/7/2021 2:10:00 PM	60905
Anthracene	0.46	0.034	0.10		µg/L	1	7/7/2021 2:10:00 PM	60905
Fluoranthene	0.32	0.10	0.20		µg/L	1	7/7/2021 2:10:00 PM	60905
Pyrene	0.42	0.16	0.20		µg/L	1	7/7/2021 2:10:00 PM	60905
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	7/7/2021 2:10:00 PM	60905
Chrysene	ND	0.024	0.10		µg/L	1	7/7/2021 2:10:00 PM	60905
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	7/7/2021 2:10:00 PM	60905
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	7/7/2021 2:10:00 PM	60905
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	7/7/2021 2:10:00 PM	60905
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	7/7/2021 2:10:00 PM	60905
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	7/7/2021 2:10:00 PM	60905
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	7/7/2021 2:10:00 PM	60905
Surr: Nitrobenzene-d5	43.0	0	26.3-112		%Rec	1	7/7/2021 2:10:00 PM	60905
Surr: 2-Fluorobiphenyl	36.0	0	21.1-110		%Rec	1	7/7/2021 2:10:00 PM	60905

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:30:00 AM
Lab ID: 2106C55-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	87.5	0	17.6-167		%Rec	1	7/7/2021 2:10:00 PM	60905

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:30:00 AM
Lab ID: 2106C55-007E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.74	0.28	0.50		mg/L	5	6/24/2021 3:47:35 PM	R79334
Chloride	340	5.0	10	*	mg/L	20	6/24/2021 4:00:28 PM	R79334
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/24/2021 3:47:35 PM	R79334
Bromide	0.98	0.25	0.50		mg/L	5	6/24/2021 3:47:35 PM	R79334
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	6/24/2021 3:47:35 PM	R79334
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/24/2021 3:47:35 PM	R79334
Sulfate	ND	1.2	2.5		mg/L	5	6/24/2021 3:47:35 PM	R79334

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:30:00 AM
Lab ID: 2106C55-007F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	1.2	0.037	0.10	*	mg/L	5	6/30/2021 11:56:17 AM	61019
Barium	2.6	0.0082	0.015	*	mg/L	5	6/30/2021 1:46:08 PM	61019
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2021 1:44:48 PM	61019
Boron	0.40	0.0074	0.040		mg/L	1	6/30/2021 1:44:48 PM	61019
Cadmium	ND	0.0015	0.0020		mg/L	1	6/30/2021 1:44:48 PM	61019
Calcium	110	0.57	5.0		mg/L	5	6/30/2021 1:46:08 PM	61019
Chromium	ND	0.0021	0.0060		mg/L	1	6/30/2021 1:44:48 PM	61019
Cobalt	0.0027	0.0024	0.0060	J	mg/L	1	6/30/2021 1:44:48 PM	61019
Copper	ND	0.0047	0.0060		mg/L	1	6/30/2021 1:44:48 PM	61019
Iron	4.6	0.064	0.25	*	mg/L	5	6/30/2021 1:46:08 PM	61019
Magnesium	32	0.067	1.0		mg/L	1	6/30/2021 1:44:48 PM	61019
Manganese	2.5	0.0041	0.010	*	mg/L	5	6/30/2021 1:46:08 PM	61019
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/30/2021 1:44:48 PM	61019
Nickel	0.0052	0.0033	0.010	J	mg/L	1	6/30/2021 1:44:48 PM	61019
Potassium	0.80	0.16	1.0	J	mg/L	1	6/30/2021 11:54:58 AM	61019
Silver	ND	0.0013	0.0050		mg/L	1	6/30/2021 1:44:48 PM	61019
Sodium	330	0.93	5.0		mg/L	5	6/30/2021 1:46:08 PM	61019
Zinc	ND	0.0064	0.010		mg/L	1	6/30/2021 1:44:48 PM	61019
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/2/2021 12:54:45 PM	61019
Arsenic	0.0018	0.00013	0.0010		mg/L	1	7/2/2021 12:54:45 PM	61019
Lead	0.00070	0.000061	0.00050		mg/L	1	7/2/2021 12:54:45 PM	61019
Selenium	ND	0.00037	0.0010		mg/L	1	7/2/2021 12:54:45 PM	61019
Thallium	ND	0.00025	0.00025		mg/L	1	7/2/2021 12:54:45 PM	61019
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/30/2021 1:52:50 PM	61000

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:30:00 AM
Lab ID: 2106C55-007G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/28/2021 10:50:29 AM	A79403
Barium	2.3	0.0056	0.010	*	mg/L	5	6/28/2021 10:51:51 AM	A79403
Beryllium	ND	0.00088	0.0020		mg/L	1	6/28/2021 10:50:29 AM	A79403
Boron	0.36	0.0067	0.040		mg/L	1	6/28/2021 10:50:29 AM	A79403
Cadmium	ND	0.0012	0.0020		mg/L	1	6/28/2021 10:50:29 AM	A79403
Chromium	ND	0.0020	0.0060		mg/L	1	6/28/2021 10:50:29 AM	A79403
Cobalt	ND	0.0024	0.0060		mg/L	1	6/28/2021 10:50:29 AM	A79403
Copper	ND	0.0035	0.0060		mg/L	1	6/28/2021 10:50:29 AM	A79403
Iron	1.5	0.052	0.10	*	mg/L	5	6/28/2021 10:51:51 AM	A79403
Manganese	2.4	0.0029	0.010	*	mg/L	5	6/28/2021 10:51:51 AM	A79403
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/28/2021 10:50:29 AM	A79403
Nickel	0.0041	0.0033	0.010	J	mg/L	1	6/28/2021 10:50:29 AM	A79403
Silver	ND	0.0013	0.0050		mg/L	1	6/28/2021 10:50:29 AM	A79403
Zinc	0.0080	0.0060	0.010	J	mg/L	1	6/28/2021 10:50:29 AM	A79403
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2021 4:12:05 PM	B79527
Arsenic	0.0011	0.00012	0.0010		mg/L	1	7/1/2021 4:12:05 PM	B79527
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2021 4:12:05 PM	B79527
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2021 4:12:05 PM	B79527
Thallium	ND	0.00025	0.00025		mg/L	1	7/1/2021 4:12:05 PM	B79527
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/7/2021 4:36:09 PM	61150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-36
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:45:00 AM
Lab ID: 2106C55-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	14000	110	500		µg/L	500	6/25/2021 10:58:23 PM	B79410
Toluene	12000	100	500		µg/L	500	6/25/2021 10:58:23 PM	B79410
Ethylbenzene	1900	11	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Methyl tert-butyl ether (MTBE)	1200	20	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,2,4-Trimethylbenzene	1400	6.1	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,3,5-Trimethylbenzene	390	9.1	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,2-Dichloroethane (EDC)	ND	11	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,2-Dibromoethane (EDB)	ND	15	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Naphthalene	780	14	100		µg/L	50	6/25/2021 11:25:32 PM	B79410
1-Methylnaphthalene	240	42	200		µg/L	50	6/25/2021 11:25:32 PM	B79410
2-Methylnaphthalene	420	35	200		µg/L	50	6/25/2021 11:25:32 PM	B79410
Acetone	ND	120	500		µg/L	50	6/25/2021 11:25:32 PM	B79410
Bromobenzene	ND	14	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Bromodichloromethane	ND	10	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Bromoform	ND	16	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Bromomethane	ND	78	150		µg/L	50	6/25/2021 11:25:32 PM	B79410
2-Butanone	250	56	500	J	µg/L	50	6/25/2021 11:25:32 PM	B79410
Carbon disulfide	ND	22	500		µg/L	50	6/25/2021 11:25:32 PM	B79410
Carbon Tetrachloride	ND	8.8	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Chlorobenzene	ND	6.8	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Chloroethane	ND	19	100		µg/L	50	6/25/2021 11:25:32 PM	B79410
Chloroform	ND	6.7	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Chloromethane	ND	20	150		µg/L	50	6/25/2021 11:25:32 PM	B79410
2-Chlorotoluene	ND	6.6	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
4-Chlorotoluene	ND	26	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
cis-1,2-DCE	ND	19	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
cis-1,3-Dichloropropene	ND	18	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,2-Dibromo-3-chloropropane	ND	29	100		µg/L	50	6/25/2021 11:25:32 PM	B79410
Dibromochloromethane	ND	14	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Dibromomethane	ND	15	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,2-Dichlorobenzene	ND	7.7	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,3-Dichlorobenzene	ND	8.1	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,4-Dichlorobenzene	ND	10	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Dichlorodifluoromethane	ND	22	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,1-Dichloroethane	ND	14	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,1-Dichloroethene	ND	6.5	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,2-Dichloropropane	ND	6.7	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,3-Dichloropropane	ND	9.0	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
2,2-Dichloropropane	ND	13	100		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,1-Dichloropropene	ND	9.0	50		µg/L	50	6/25/2021 11:25:32 PM	B79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-36
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:45:00 AM
Lab ID: 2106C55-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	16	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
2-Hexanone	ND	90	500		µg/L	50	6/25/2021 11:25:32 PM	B79410
Isopropylbenzene	85	9.1	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
4-Isopropyltoluene	10	10	50	J	µg/L	50	6/25/2021 11:25:32 PM	B79410
4-Methyl-2-pentanone	ND	56	500		µg/L	50	6/25/2021 11:25:32 PM	B79410
Methylene Chloride	ND	20	150		µg/L	50	6/25/2021 11:25:32 PM	B79410
n-Butylbenzene	58	13	150	J	µg/L	50	6/25/2021 11:25:32 PM	B79410
n-Propylbenzene	210	9.1	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
sec-Butylbenzene	ND	30	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Styrene	ND	6.5	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
tert-Butylbenzene	ND	12	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,1,1,2-Tetrachloroethane	ND	13	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,1,2,2-Tetrachloroethane	ND	14	100		µg/L	50	6/25/2021 11:25:32 PM	B79410
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
trans-1,2-DCE	ND	24	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
trans-1,3-Dichloropropene	ND	17	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,2,3-Trichlorobenzene	ND	6.7	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,2,4-Trichlorobenzene	ND	12	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,1,1-Trichloroethane	ND	15	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,1,2-Trichloroethane	ND	9.4	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Trichloroethene (TCE)	ND	10	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Trichlorofluoromethane	ND	4.6	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
1,2,3-Trichloropropane	ND	22	100		µg/L	50	6/25/2021 11:25:32 PM	B79410
Vinyl chloride	ND	9.8	50		µg/L	50	6/25/2021 11:25:32 PM	B79410
Xylenes, Total	4200	28	75		µg/L	50	6/25/2021 11:25:32 PM	B79410
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	50	6/25/2021 11:25:32 PM	B79410
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	50	6/25/2021 11:25:32 PM	B79410
Surr: Dibromofluoromethane	99.1	0	70-130		%Rec	50	6/25/2021 11:25:32 PM	B79410
Surr: Toluene-d8	100	0	70-130		%Rec	50	6/25/2021 11:25:32 PM	B79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	75	1.4	2.5		mg/L	50	6/25/2021 11:25:32 PM	GW794
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	50	6/25/2021 11:25:32 PM	GW794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-36
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:45:00 AM
Lab ID: 2106C55-008B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	8.2	0.32	1.3		mg/L	20	7/4/2021 3:22:17 AM	60947
Motor Oil Range Organics (MRO)	ND	1.0	1.6	D	mg/L	20	7/4/2021 3:22:17 AM	60947
Surr: DNOP	0	0	15-142	S	%Rec	20	7/4/2021 3:22:17 AM	60947

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-36
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:45:00 AM
Lab ID: 2106C55-008C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	6/29/2021 10:04:37 PM	60990

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-36
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:45:00 AM
Lab ID: 2106C55-008D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	2.5	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Azobenzene	ND	2.7	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Benzoic acid	ND	5.3	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Benzyl alcohol	ND	3.4	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Bis(2-chloroethoxy)methane	ND	2.0	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Bis(2-chloroethyl)ether	ND	3.1	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Bis(2-chloroisopropyl)ether	ND	2.7	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Bis(2-ethylhexyl)phthalate	37	22	50	J	µg/L	1	7/7/2021 7:53:55 PM	60957
4-Bromophenyl phenyl ether	ND	3.8	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Butyl benzyl phthalate	ND	3.7	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Carbazole	ND	2.8	25		µg/L	1	7/7/2021 7:53:55 PM	60957
4-Chloro-3-methylphenol	ND	2.0	25		µg/L	1	7/7/2021 7:53:55 PM	60957
4-Chloroaniline	ND	2.7	25		µg/L	1	7/7/2021 7:53:55 PM	60957
2-Chloronaphthalene	ND	3.0	25		µg/L	1	7/7/2021 7:53:55 PM	60957
2-Chlorophenol	ND	3.1	25		µg/L	1	7/7/2021 7:53:55 PM	60957
4-Chlorophenyl phenyl ether	ND	2.8	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Di-n-butyl phthalate	ND	32	50		µg/L	1	7/7/2021 7:53:55 PM	60957
Di-n-octyl phthalate	33	16	100	J	µg/L	1	7/7/2021 7:53:55 PM	60957
Dibenzofuran	ND	1.9	25		µg/L	1	7/7/2021 7:53:55 PM	60957
1,2-Dichlorobenzene	ND	3.8	25		µg/L	1	7/7/2021 7:53:55 PM	60957
1,3-Dichlorobenzene	ND	3.2	25		µg/L	1	7/7/2021 7:53:55 PM	60957
1,4-Dichlorobenzene	ND	3.5	25		µg/L	1	7/7/2021 7:53:55 PM	60957
3,3´-Dichlorobenzidine	ND	2.5	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Diethyl phthalate	ND	19	50		µg/L	1	7/7/2021 7:53:55 PM	60957
Dimethyl phthalate	ND	10	50		µg/L	1	7/7/2021 7:53:55 PM	60957
2,4-Dichlorophenol	ND	2.9	25		µg/L	1	7/7/2021 7:53:55 PM	60957
2,4-Dimethylphenol	27	4.9	25		µg/L	1	7/7/2021 7:53:55 PM	60957
4,6-Dinitro-2-methylphenol	ND	2.6	25		µg/L	1	7/7/2021 7:53:55 PM	60957
2,4-Dinitrophenol	ND	2.5	25		µg/L	1	7/7/2021 7:53:55 PM	60957
2,4-Dinitrotoluene	ND	3.1	25		µg/L	1	7/7/2021 7:53:55 PM	60957
2,6-Dinitrotoluene	ND	2.9	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Hexachlorobenzene	ND	3.3	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Hexachlorobutadiene	ND	4.1	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Hexachlorocyclopentadiene	ND	3.2	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Hexachloroethane	ND	2.2	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Isophorone	ND	2.0	25		µg/L	1	7/7/2021 7:53:55 PM	60957
2-Methylphenol	63	2.6	25		µg/L	1	7/7/2021 7:53:55 PM	60957
3+4-Methylphenol	ND	2.3	25		µg/L	1	7/7/2021 7:53:55 PM	60957
N-Nitrosodi-n-propylamine	ND	2.4	25		µg/L	1	7/7/2021 7:53:55 PM	60957
N-Nitrosodimethylamine	ND	1.8	25		µg/L	1	7/7/2021 7:53:55 PM	60957

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-36
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:45:00 AM
Lab ID: 2106C55-008D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
N-Nitrosodiphenylamine	ND	5.1	25		µg/L	1	7/7/2021 7:53:55 PM	60957
2-Nitroaniline	ND	1.5	25		µg/L	1	7/7/2021 7:53:55 PM	60957
3-Nitroaniline	ND	7.8	25		µg/L	1	7/7/2021 7:53:55 PM	60957
4-Nitroaniline	ND	2.3	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Nitrobenzene	ND	2.5	25		µg/L	1	7/7/2021 7:53:55 PM	60957
2-Nitrophenol	ND	2.4	25		µg/L	1	7/7/2021 7:53:55 PM	60957
4-Nitrophenol	ND	1.4	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Pentachlorophenol	ND	2.9	100		µg/L	1	7/7/2021 7:53:55 PM	60957
Phenol	47	1.6	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Pyridine	ND	4.6	25		µg/L	1	7/7/2021 7:53:55 PM	60957
1,2,4-Trichlorobenzene	ND	2.9	25		µg/L	1	7/7/2021 7:53:55 PM	60957
2,4,5-Trichlorophenol	ND	3.1	25		µg/L	1	7/7/2021 7:53:55 PM	60957
2,4,6-Trichlorophenol	ND	2.2	25		µg/L	1	7/7/2021 7:53:55 PM	60957
Surr: 2-Fluorophenol	0	0	15-88.8	S	%Rec	1	7/7/2021 7:53:55 PM	60957
Surr: Phenol-d5	30.9	0	15-71.9		%Rec	1	7/7/2021 7:53:55 PM	60957
Surr: 2,4,6-Tribromophenol	72.9	0	15-97.4		%Rec	1	7/7/2021 7:53:55 PM	60957
Surr: Nitrobenzene-d5	50.2	0	15-117		%Rec	1	7/7/2021 7:53:55 PM	60957
Surr: 2-Fluorobiphenyl	58.2	0	15-100		%Rec	1	7/7/2021 7:53:55 PM	60957
Surr: 4-Terphenyl-d14	58.0	0	15-120		%Rec	1	7/7/2021 7:53:55 PM	60957
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	4.4	0.48	10	J	µg/L	1	7/7/2021 2:54:00 PM	60905
Naphthalene	500	6.7	20		µg/L	20	7/9/2021 6:00:00 AM	60905
1-Methylnaphthalene	250	4.8	20		µg/L	20	7/9/2021 6:00:00 AM	60905
2-Methylnaphthalene	430	6.7	20		µg/L	20	7/9/2021 6:00:00 AM	60905
Acenaphthylene	ND	0.43	1.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Acenaphthene	8.4	0.31	1.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Fluorene	15	0.31	1.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Phenanthrene	15	0.57	1.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Anthracene	3.2	0.34	1.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Fluoranthene	3.0	1.0	2.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Pyrene	3.4	1.6	2.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Benz(a)anthracene	ND	0.36	1.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Chrysene	ND	0.24	1.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Benzo(b)fluoranthene	ND	0.57	1.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Benzo(k)fluoranthene	ND	0.36	1.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Benzo(a)pyrene	ND	0.34	0.70		µg/L	1	7/7/2021 2:54:00 PM	60905
Dibenz(a,h)anthracene	ND	0.34	1.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Benzo(g,h,i)perylene	ND	0.34	1.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Indeno(1,2,3-cd)pyrene	ND	0.43	3.0		µg/L	1	7/7/2021 2:54:00 PM	60905
Surr: Nitrobenzene-d5	8.00	0	26.3-112	S	%Rec	1	7/7/2021 2:54:00 PM	60905

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-36
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:45:00 AM
Lab ID: 2106C55-008D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 2-Fluorobiphenyl	35.5	0	21.1-110		%Rec	1	7/7/2021 2:54:00 PM	60905
Surr: 4-Terphenyl-d14	98.0	0	17.6-167		%Rec	1	7/7/2021 2:54:00 PM	60905

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-36
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:45:00 AM
Lab ID: 2106C55-008E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.77	0.28	0.50		mg/L	5	6/24/2021 4:13:21 PM	R79334
Chloride	300	5.0	10	*	mg/L	20	6/24/2021 4:26:14 PM	R79334
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/24/2021 4:13:21 PM	R79334
Bromide	0.72	0.25	0.50		mg/L	5	6/24/2021 4:13:21 PM	R79334
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	6/24/2021 4:13:21 PM	R79334
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/24/2021 4:13:21 PM	R79334
Sulfate	ND	1.2	2.5		mg/L	5	6/24/2021 4:13:21 PM	R79334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-36
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:45:00 AM
Lab ID: 2106C55-008F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.052	0.0074	0.020		mg/L	1	6/30/2021 11:57:39 AM	61019
Barium	7.4	0.033	0.060	*	mg/L	20	6/30/2021 1:50:08 PM	61019
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2021 1:47:29 PM	61019
Boron	0.32	0.0074	0.040		mg/L	1	6/30/2021 1:47:29 PM	61019
Cadmium	ND	0.0015	0.0020		mg/L	1	6/30/2021 1:47:29 PM	61019
Calcium	140	0.57	5.0		mg/L	5	6/30/2021 1:48:50 PM	61019
Chromium	ND	0.0021	0.0060		mg/L	1	6/30/2021 1:47:29 PM	61019
Cobalt	0.0032	0.0024	0.0060	J	mg/L	1	6/30/2021 1:47:29 PM	61019
Copper	ND	0.0047	0.0060		mg/L	1	6/30/2021 1:47:29 PM	61019
Iron	16	0.26	1.0	*	mg/L	20	6/30/2021 1:50:08 PM	61019
Magnesium	44	0.067	1.0		mg/L	1	6/30/2021 1:47:29 PM	61019
Manganese	1.8	0.0041	0.010	*	mg/L	5	6/30/2021 1:48:50 PM	61019
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/30/2021 1:47:29 PM	61019
Nickel	0.0048	0.0033	0.010	J	mg/L	1	6/30/2021 1:47:29 PM	61019
Potassium	0.93	0.16	1.0	J	mg/L	1	6/30/2021 11:57:39 AM	61019
Silver	ND	0.0013	0.0050		mg/L	1	6/30/2021 1:47:29 PM	61019
Sodium	230	0.93	5.0		mg/L	5	6/30/2021 1:48:50 PM	61019
Zinc	ND	0.0064	0.010		mg/L	1	6/30/2021 1:47:29 PM	61019
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/2/2021 12:57:10 PM	61019
Arsenic	0.016	0.00013	0.0010	*	mg/L	1	7/2/2021 12:57:10 PM	61019
Lead	0.0025	0.000061	0.00050		mg/L	1	7/2/2021 12:57:10 PM	61019
Selenium	ND	0.00037	0.0010		mg/L	1	7/2/2021 12:57:10 PM	61019
Thallium	ND	0.00025	0.00025		mg/L	1	7/2/2021 12:57:10 PM	61019
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/30/2021 1:55:14 PM	61000

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-36
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 11:45:00 AM
Lab ID: 2106C55-008G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.039	0.0056	0.020		mg/L	1	6/28/2021 10:58:14 AM	A79403
Barium	7.5	0.022	0.040	*	mg/L	20	6/28/2021 11:54:21 AM	B79403
Beryllium	ND	0.00088	0.0020		mg/L	1	6/28/2021 10:58:14 AM	A79403
Boron	0.31	0.0067	0.040		mg/L	1	6/28/2021 10:58:14 AM	A79403
Cadmium	ND	0.0012	0.0020		mg/L	1	6/28/2021 10:58:14 AM	A79403
Chromium	ND	0.0020	0.0060		mg/L	1	6/28/2021 10:58:14 AM	A79403
Cobalt	ND	0.0024	0.0060		mg/L	1	6/28/2021 10:58:14 AM	A79403
Copper	ND	0.0035	0.0060		mg/L	1	6/28/2021 10:58:14 AM	A79403
Iron	14	0.21	0.40	*	mg/L	20	6/28/2021 11:54:21 AM	B79403
Manganese	1.7	0.0029	0.010	*	mg/L	5	6/28/2021 10:59:34 AM	A79403
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/28/2021 10:58:14 AM	A79403
Nickel	0.0054	0.0033	0.010	J	mg/L	1	6/28/2021 10:58:14 AM	A79403
Silver	ND	0.0013	0.0050		mg/L	1	6/28/2021 10:58:14 AM	A79403
Zinc	0.0084	0.0060	0.010	J	mg/L	1	6/28/2021 10:58:14 AM	A79403
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2021 4:16:48 PM	B79527
Arsenic	0.016	0.00012	0.0010	*	mg/L	1	7/1/2021 4:16:48 PM	B79527
Lead	0.0017	0.000057	0.00050		mg/L	1	7/1/2021 4:16:48 PM	B79527
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2021 4:16:48 PM	B79527
Thallium	ND	0.00025	0.00025		mg/L	1	7/1/2021 4:16:48 PM	B79527
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/7/2021 4:38:32 PM	61150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	5400	23	100		µg/L	100	6/30/2021 12:27:17 AM	R79445
Toluene	170	2.0	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Ethylbenzene	590	2.1	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Methyl tert-butyl ether (MTBE)	180	3.9	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,2,4-Trimethylbenzene	250	1.2	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,3,5-Trimethylbenzene	8.6	1.8	10	J	µg/L	10	6/30/2021 12:54:31 AM	R79445
1,2-Dichloroethane (EDC)	ND	2.2	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Naphthalene	61	2.8	20		µg/L	10	6/30/2021 12:54:31 AM	R79445
1-Methylnaphthalene	ND	8.4	40		µg/L	10	6/30/2021 12:54:31 AM	R79445
2-Methylnaphthalene	7.0	6.9	40	J	µg/L	10	6/30/2021 12:54:31 AM	R79445
Acetone	ND	23	100		µg/L	10	6/30/2021 12:54:31 AM	R79445
Bromobenzene	ND	2.8	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Bromodichloromethane	ND	2.0	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Bromoform	ND	3.1	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Bromomethane	ND	16	30		µg/L	10	6/30/2021 12:54:31 AM	R79445
2-Butanone	ND	11	100		µg/L	10	6/30/2021 12:54:31 AM	R79445
Carbon disulfide	ND	4.4	100		µg/L	10	6/30/2021 12:54:31 AM	R79445
Carbon Tetrachloride	ND	1.8	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Chlorobenzene	ND	1.4	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Chloroethane	ND	3.8	20		µg/L	10	6/30/2021 12:54:31 AM	R79445
Chloroform	ND	1.3	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Chloromethane	ND	4.0	30		µg/L	10	6/30/2021 12:54:31 AM	R79445
2-Chlorotoluene	ND	1.3	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
4-Chlorotoluene	ND	5.1	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
cis-1,2-DCE	ND	3.9	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	6/30/2021 12:54:31 AM	R79445
Dibromochloromethane	ND	2.8	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Dibromomethane	ND	3.1	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,4-Dichlorobenzene	4.3	2.1	10	J	µg/L	10	6/30/2021 12:54:31 AM	R79445
Dichlorodifluoromethane	ND	4.4	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,1-Dichloroethane	ND	2.7	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,1-Dichloroethene	ND	1.3	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,2-Dichloropropane	ND	1.3	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,3-Dichloropropane	ND	1.8	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
2,2-Dichloropropane	ND	2.6	20		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,1-Dichloropropene	ND	1.8	10		µg/L	10	6/30/2021 12:54:31 AM	R79445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	3.3	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
2-Hexanone	ND	18	100		µg/L	10	6/30/2021 12:54:31 AM	R79445
Isopropylbenzene	22	1.8	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
4-Isopropyltoluene	ND	2.0	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
4-Methyl-2-pentanone	ND	11	100		µg/L	10	6/30/2021 12:54:31 AM	R79445
Methylene Chloride	ND	4.0	30		µg/L	10	6/30/2021 12:54:31 AM	R79445
n-Butylbenzene	3.0	2.5	30	J	µg/L	10	6/30/2021 12:54:31 AM	R79445
n-Propylbenzene	57	1.8	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
sec-Butylbenzene	ND	6.1	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Styrene	ND	1.3	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
tert-Butylbenzene	ND	2.4	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	6/30/2021 12:54:31 AM	R79445
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
trans-1,2-DCE	ND	4.9	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,2,3-Trichlorobenzene	ND	1.3	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,1,2-Trichloroethane	ND	1.9	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Trichlorofluoromethane	ND	0.92	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	6/30/2021 12:54:31 AM	R79445
Vinyl chloride	ND	2.0	10		µg/L	10	6/30/2021 12:54:31 AM	R79445
Xylenes, Total	700	5.5	15		µg/L	10	6/30/2021 12:54:31 AM	R79445
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	10	6/30/2021 12:54:31 AM	R79445
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	10	6/30/2021 12:54:31 AM	R79445
Surr: Dibromofluoromethane	100	0	70-130		%Rec	10	6/30/2021 12:54:31 AM	R79445
Surr: Toluene-d8	98.4	0	70-130		%Rec	10	6/30/2021 12:54:31 AM	R79445
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	14	0.28	0.50		mg/L	10	6/30/2021 12:54:31 AM	G79445
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	10	6/30/2021 12:54:31 AM	G79445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-009B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.4	0.016	0.064		mg/L	1	6/30/2021 3:25:31 PM	60947
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/30/2021 3:25:31 PM	60947
Surr: DNOP	95.6	0	15-142		%Rec	1	6/30/2021 3:25:31 PM	60947

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-009C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	6/29/2021 10:19:39 PM	60990

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-009D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Azobenzene	ND	0.55	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Benzoic acid	ND	1.1	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Benzyl alcohol	ND	0.68	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Bis(2-ethylhexyl)phthalate	5.5	4.5	10	J	µg/L	1	7/7/2021 8:35:43 PM	60957
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Carbazole	4.0	0.56	5.0	J	µg/L	1	7/7/2021 8:35:43 PM	60957
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
4-Chloroaniline	ND	0.53	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
2-Chlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	7/7/2021 8:35:43 PM	60957
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	7/7/2021 8:35:43 PM	60957
Dibenzofuran	3.4	0.38	5.0	J	µg/L	1	7/7/2021 8:35:43 PM	60957
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
1,4-Dichlorobenzene	1.9	0.70	5.0	J	µg/L	1	7/7/2021 8:35:43 PM	60957
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Diethyl phthalate	ND	3.9	10		µg/L	1	7/7/2021 8:35:43 PM	60957
Dimethyl phthalate	ND	2.0	10		µg/L	1	7/7/2021 8:35:43 PM	60957
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
2,4-Dimethylphenol	5.9	0.97	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Hexachloroethane	ND	0.45	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Isophorone	ND	0.40	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
2-Methylphenol	1.7	0.51	5.0	J	µg/L	1	7/7/2021 8:35:43 PM	60957
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-009D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
2-Nitroaniline	ND	0.31	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
3-Nitroaniline	ND	1.6	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
4-Nitroaniline	ND	0.47	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Nitrobenzene	ND	0.51	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
2-Nitrophenol	ND	0.47	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
4-Nitrophenol	ND	0.28	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Pentachlorophenol	ND	0.59	20		µg/L	1	7/7/2021 8:35:43 PM	60957
Phenol	54	0.33	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Pyridine	ND	0.93	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	7/7/2021 8:35:43 PM	60957
Surr: 2-Fluorophenol	54.8	0	15-88.8		%Rec	1	7/7/2021 8:35:43 PM	60957
Surr: Phenol-d5	42.3	0	15-71.9		%Rec	1	7/7/2021 8:35:43 PM	60957
Surr: 2,4,6-Tribromophenol	75.3	0	15-97.4		%Rec	1	7/7/2021 8:35:43 PM	60957
Surr: Nitrobenzene-d5	63.2	0	15-117		%Rec	1	7/7/2021 8:35:43 PM	60957
Surr: 2-Fluorobiphenyl	64.0	0	15-100		%Rec	1	7/7/2021 8:35:43 PM	60957
Surr: 4-Terphenyl-d14	55.6	0	15-120		%Rec	1	7/7/2021 8:35:43 PM	60957
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	35	0.67	2.0		µg/L	20	7/9/2021 6:44:00 AM	60905
1-Methylnaphthalene	4.8	0.024	0.10		µg/L	1	7/7/2021 3:39:00 PM	60905
2-Methylnaphthalene	5.2	0.034	0.10		µg/L	1	7/7/2021 3:39:00 PM	60905
Acenaphthylene	ND	0.043	0.10		µg/L	1	7/7/2021 3:39:00 PM	60905
Acenaphthene	1.8	0.031	0.10		µg/L	1	7/7/2021 3:39:00 PM	60905
Fluorene	0.38	0.031	0.10		µg/L	1	7/7/2021 3:39:00 PM	60905
Phenanthrene	0.28	0.057	0.10		µg/L	1	7/7/2021 3:39:00 PM	60905
Anthracene	0.40	0.034	0.10		µg/L	1	7/7/2021 3:39:00 PM	60905
Fluoranthene	0.26	0.10	0.20		µg/L	1	7/7/2021 3:39:00 PM	60905
Pyrene	0.30	0.16	0.20		µg/L	1	7/7/2021 3:39:00 PM	60905
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	7/7/2021 3:39:00 PM	60905
Chrysene	ND	0.024	0.10		µg/L	1	7/7/2021 3:39:00 PM	60905
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	7/7/2021 3:39:00 PM	60905
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	7/7/2021 3:39:00 PM	60905
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	7/7/2021 3:39:00 PM	60905
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	7/7/2021 3:39:00 PM	60905
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	7/7/2021 3:39:00 PM	60905
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	7/7/2021 3:39:00 PM	60905
Surr: Nitrobenzene-d5	58.5	0	26.3-112		%Rec	1	7/7/2021 3:39:00 PM	60905
Surr: 2-Fluorobiphenyl	47.5	0	21.1-110		%Rec	1	7/7/2021 3:39:00 PM	60905

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-009D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	91.5	0	17.6-167		%Rec	1	7/7/2021 3:39:00 PM	60905

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-009E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.70	0.28	0.50		mg/L	5	6/24/2021 4:39:06 PM	R79334
Chloride	390	12	25	*	mg/L	50	7/2/2021 5:59:30 PM	R79574
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/24/2021 4:39:06 PM	R79334
Bromide	0.87	0.25	0.50		mg/L	5	6/24/2021 4:39:06 PM	R79334
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	6/24/2021 4:39:06 PM	R79334
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/24/2021 4:39:06 PM	R79334
Sulfate	ND	1.2	2.5		mg/L	5	6/24/2021 4:39:06 PM	R79334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-009F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	20	0.37	1.0	*	mg/L	50	7/1/2021 9:10:15 AM	61019
Barium	4.1	0.0082	0.015	*	mg/L	5	6/30/2021 1:52:51 PM	61019
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2021 1:51:31 PM	61019
Boron	0.33	0.0074	0.040		mg/L	1	6/30/2021 1:51:31 PM	61019
Cadmium	ND	0.0015	0.0020		mg/L	1	6/30/2021 1:51:31 PM	61019
Calcium	240	0.57	5.0		mg/L	5	6/30/2021 1:52:51 PM	61019
Chromium	0.0088	0.0021	0.0060		mg/L	1	6/30/2021 1:51:31 PM	61019
Cobalt	0.011	0.0024	0.0060		mg/L	1	6/30/2021 1:51:31 PM	61019
Copper	0.0084	0.0047	0.0060		mg/L	1	6/30/2021 1:51:31 PM	61019
Iron	14	0.64	2.5	*	mg/L	50	7/1/2021 9:10:15 AM	61019
Magnesium	67	0.067	1.0		mg/L	1	6/30/2021 1:51:31 PM	61019
Manganese	4.5	0.0041	0.010	*	mg/L	5	6/30/2021 1:52:51 PM	61019
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/30/2021 1:51:31 PM	61019
Nickel	0.0096	0.0033	0.010	J	mg/L	1	6/30/2021 1:51:31 PM	61019
Potassium	2.4	0.16	1.0		mg/L	1	6/30/2021 1:51:31 PM	61019
Silver	ND	0.0013	0.0050		mg/L	1	6/30/2021 1:51:31 PM	61019
Sodium	250	0.93	5.0		mg/L	5	6/30/2021 1:52:51 PM	61019
Zinc	0.017	0.0064	0.010		mg/L	1	6/30/2021 1:51:31 PM	61019
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/2/2021 12:59:35 PM	61019
Arsenic	0.0038	0.00013	0.0010		mg/L	1	7/2/2021 12:59:35 PM	61019
Lead	0.010	0.000061	0.00050		mg/L	1	7/2/2021 12:59:35 PM	61019
Selenium	0.0015	0.00037	0.0010		mg/L	1	7/2/2021 12:59:35 PM	61019
Thallium	ND	0.00025	0.00025		mg/L	1	7/2/2021 12:59:35 PM	61019
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/30/2021 2:02:25 PM	61000

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-009G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/28/2021 11:00:55 AM	A79403
Barium	2.6	0.0056	0.010	*	mg/L	5	6/28/2021 11:02:30 AM	A79403
Beryllium	ND	0.00088	0.0020		mg/L	1	6/28/2021 11:00:55 AM	A79403
Boron	0.34	0.0067	0.040		mg/L	1	6/28/2021 11:00:55 AM	A79403
Cadmium	ND	0.0012	0.0020		mg/L	1	6/28/2021 11:00:55 AM	A79403
Chromium	ND	0.0020	0.0060		mg/L	1	6/28/2021 11:00:55 AM	A79403
Cobalt	ND	0.0024	0.0060		mg/L	1	6/28/2021 11:00:55 AM	A79403
Copper	ND	0.0035	0.0060		mg/L	1	6/28/2021 11:00:55 AM	A79403
Iron	0.049	0.010	0.020		mg/L	1	6/28/2021 11:00:55 AM	A79403
Manganese	3.1	0.0029	0.010	*	mg/L	5	6/28/2021 11:02:30 AM	A79403
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/28/2021 11:00:55 AM	A79403
Nickel	ND	0.0033	0.010		mg/L	1	6/28/2021 11:00:55 AM	A79403
Silver	ND	0.0013	0.0050		mg/L	1	6/28/2021 11:00:55 AM	A79403
Zinc	0.0061	0.0060	0.010	J	mg/L	1	6/28/2021 11:00:55 AM	A79403
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2021 4:21:32 PM	B79527
Arsenic	0.00027	0.00012	0.0010	J	mg/L	1	7/1/2021 4:21:32 PM	B79527
Lead	0.00021	0.000057	0.00050	J	mg/L	1	7/1/2021 4:21:32 PM	B79527
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2021 4:21:32 PM	B79527
Thallium	ND	0.00025	0.00025		mg/L	1	7/1/2021 4:21:32 PM	B79527
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/7/2021 4:40:55 PM	61150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-011A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.82	0.23	1.0	J	µg/L	1	6/30/2021 3:10:40 AM	R79445
Toluene	0.97	0.20	1.0	J	µg/L	1	6/30/2021 3:10:40 AM	R79445
Ethylbenzene	0.35	0.21	1.0	J	µg/L	1	6/30/2021 3:10:40 AM	R79445
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,2,4-Trimethylbenzene	0.24	0.12	1.0	J	µg/L	1	6/30/2021 3:10:40 AM	R79445
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Naphthalene	0.31	0.28	2.0	J	µg/L	1	6/30/2021 3:10:40 AM	R79445
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Acetone	7.8	2.3	10	J	µg/L	1	6/30/2021 3:10:40 AM	R79445
Bromobenzene	ND	0.28	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Bromodichloromethane	0.22	0.20	1.0	J	µg/L	1	6/30/2021 3:10:40 AM	R79445
Bromoform	ND	0.31	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Bromomethane	ND	1.6	3.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
2-Butanone	1.8	1.1	10	J	µg/L	1	6/30/2021 3:10:40 AM	R79445
Carbon disulfide	ND	0.44	10		µg/L	1	6/30/2021 3:10:40 AM	R79445
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Chloroethane	ND	0.38	2.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Chloroform	ND	0.13	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Chloromethane	ND	0.40	3.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Dibromomethane	ND	0.31	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,4-Dichlorobenzene	0.27	0.21	1.0	J	µg/L	1	6/30/2021 3:10:40 AM	R79445
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-011A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
2-Hexanone	ND	1.8	10		µg/L	1	6/30/2021 3:10:40 AM	R79445
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/30/2021 3:10:40 AM	R79445
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Styrene	0.30	0.13	1.0	J	µg/L	1	6/30/2021 3:10:40 AM	R79445
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/30/2021 3:10:40 AM	R79445
Xylenes, Total	0.56	0.55	1.5	J	µg/L	1	6/30/2021 3:10:40 AM	R79445
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	6/30/2021 3:10:40 AM	R79445
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	6/30/2021 3:10:40 AM	R79445
Surr: Dibromofluoromethane	105	0	70-130		%Rec	1	6/30/2021 3:10:40 AM	R79445
Surr: Toluene-d8	96.6	0	70-130		%Rec	1	6/30/2021 3:10:40 AM	R79445
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.030	0.028	0.050	J	mg/L	1	6/30/2021 3:10:40 AM	G79445
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	6/30/2021 3:10:40 AM	G79445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-011B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.024	0.016	0.064	J	mg/L	1	6/30/2021 3:49:14 PM	60947
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/30/2021 3:49:14 PM	60947
Surr: DNOP	97.7	0	15-142		%Rec	1	6/30/2021 3:49:14 PM	60947

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-011C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Azobenzene	ND	0.55	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Benzoic acid	ND	1.1	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Benzyl alcohol	ND	0.68	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Bis(2-ethylhexyl)phthalate	4.8	4.5	10	J	µg/L	1	7/7/2021 9:17:45 PM	60957
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Carbazole	ND	0.56	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
4-Chloroaniline	ND	0.53	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
2-Chlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	7/7/2021 9:17:45 PM	60957
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	7/7/2021 9:17:45 PM	60957
Dibenzofuran	ND	0.38	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Diethyl phthalate	ND	3.9	10		µg/L	1	7/7/2021 9:17:45 PM	60957
Dimethyl phthalate	ND	2.0	10		µg/L	1	7/7/2021 9:17:45 PM	60957
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Hexachloroethane	ND	0.45	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Isophorone	ND	0.40	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
2-Methylphenol	ND	0.51	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957

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Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-011C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
2-Nitroaniline	ND	0.31	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
3-Nitroaniline	ND	1.6	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
4-Nitroaniline	ND	0.47	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Nitrobenzene	ND	0.51	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
2-Nitrophenol	ND	0.47	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
4-Nitrophenol	ND	0.28	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Pentachlorophenol	ND	0.59	20		µg/L	1	7/7/2021 9:17:45 PM	60957
Phenol	ND	0.33	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Pyridine	ND	0.93	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	7/7/2021 9:17:45 PM	60957
Surr: 2-Fluorophenol	52.0	0	15-88.8		%Rec	1	7/7/2021 9:17:45 PM	60957
Surr: Phenol-d5	37.6	0	15-71.9		%Rec	1	7/7/2021 9:17:45 PM	60957
Surr: 2,4,6-Tribromophenol	60.8	0	15-97.4		%Rec	1	7/7/2021 9:17:45 PM	60957
Surr: Nitrobenzene-d5	58.9	0	15-117		%Rec	1	7/7/2021 9:17:45 PM	60957
Surr: 2-Fluorobiphenyl	53.0	0	15-100		%Rec	1	7/7/2021 9:17:45 PM	60957
Surr: 4-Terphenyl-d14	50.2	0	15-120		%Rec	1	7/7/2021 9:17:45 PM	60957
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
Acenaphthylene	ND	0.043	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
Acenaphthene	ND	0.031	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
Fluorene	ND	0.031	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
Phenanthrene	ND	0.057	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
Anthracene	ND	0.034	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
Fluoranthene	ND	0.10	0.20		µg/L	1	7/7/2021 4:23:00 PM	60905
Pyrene	ND	0.16	0.20		µg/L	1	7/7/2021 4:23:00 PM	60905
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
Chrysene	ND	0.024	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	7/7/2021 4:23:00 PM	60905
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	7/7/2021 4:23:00 PM	60905
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	7/7/2021 4:23:00 PM	60905
Surr: Nitrobenzene-d5	64.0	0	26.3-112		%Rec	1	7/7/2021 4:23:00 PM	60905
Surr: 2-Fluorobiphenyl	51.0	0	21.1-110		%Rec	1	7/7/2021 4:23:00 PM	60905

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-011C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	101	0	17.6-167		%Rec	1	7/7/2021 4:23:00 PM	60905

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-011D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.056	0.10		mg/L	1	6/24/2021 5:04:51 PM	R79334
Chloride	ND	0.25	0.50		mg/L	1	6/24/2021 5:04:51 PM	R79334
Nitrogen, Nitrite (As N)	ND	0.015	0.10		mg/L	1	6/24/2021 5:04:51 PM	R79334
Bromide	ND	0.050	0.10		mg/L	1	6/24/2021 5:04:51 PM	R79334
Nitrogen, Nitrate (As N)	0.043	0.020	0.10	J	mg/L	1	6/24/2021 5:04:51 PM	R79334
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	6/24/2021 5:04:51 PM	R79334
Sulfate	ND	0.25	0.50		mg/L	1	6/24/2021 5:04:51 PM	R79334

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-011E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	ND	0.0074	0.020		mg/L	1	6/30/2021 1:54:13 PM	61019
Barium	ND	0.0016	0.0030		mg/L	1	6/30/2021 1:54:13 PM	61019
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2021 1:54:13 PM	61019
Boron	ND	0.0074	0.040		mg/L	1	6/30/2021 1:54:13 PM	61019
Cadmium	ND	0.0015	0.0020		mg/L	1	6/30/2021 1:54:13 PM	61019
Calcium	ND	0.11	1.0		mg/L	1	6/30/2021 1:54:13 PM	61019
Chromium	ND	0.0021	0.0060		mg/L	1	6/30/2021 1:54:13 PM	61019
Cobalt	ND	0.0024	0.0060		mg/L	1	6/30/2021 1:54:13 PM	61019
Copper	ND	0.0047	0.0060		mg/L	1	6/30/2021 1:54:13 PM	61019
Iron	ND	0.013	0.050		mg/L	1	6/30/2021 1:54:13 PM	61019
Magnesium	ND	0.067	1.0		mg/L	1	6/30/2021 1:54:13 PM	61019
Manganese	ND	0.00081	0.0020		mg/L	1	6/30/2021 1:54:13 PM	61019
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/30/2021 1:54:13 PM	61019
Nickel	ND	0.0033	0.010		mg/L	1	6/30/2021 1:54:13 PM	61019
Potassium	ND	0.16	1.0		mg/L	1	6/30/2021 1:54:13 PM	61019
Silver	ND	0.0013	0.0050		mg/L	1	6/30/2021 1:54:13 PM	61019
Sodium	ND	0.19	1.0		mg/L	1	6/30/2021 1:54:13 PM	61019
Zinc	ND	0.0064	0.010		mg/L	1	6/30/2021 1:54:13 PM	61019
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/2/2021 1:02:01 PM	61019
Arsenic	ND	0.00013	0.0010		mg/L	1	7/2/2021 1:02:01 PM	61019
Lead	ND	0.000061	0.00050		mg/L	1	7/2/2021 1:02:01 PM	61019
Selenium	ND	0.00037	0.0010		mg/L	1	7/2/2021 1:02:01 PM	61019
Thallium	ND	0.00025	0.00025		mg/L	1	7/2/2021 1:02:01 PM	61019
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/30/2021 2:04:50 PM	61000

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021 12:00:00 PM
Lab ID: 2106C55-011F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/28/2021 11:04:06 AM	B79403
Barium	ND	0.0011	0.0020		mg/L	1	6/28/2021 11:04:06 AM	B79403
Beryllium	ND	0.00088	0.0020		mg/L	1	6/28/2021 11:04:06 AM	B79403
Boron	ND	0.0067	0.040		mg/L	1	6/28/2021 11:04:06 AM	B79403
Cadmium	ND	0.0012	0.0020		mg/L	1	6/28/2021 11:04:06 AM	B79403
Chromium	ND	0.0020	0.0060		mg/L	1	6/28/2021 11:04:06 AM	B79403
Cobalt	ND	0.0024	0.0060		mg/L	1	6/28/2021 11:04:06 AM	B79403
Copper	ND	0.0035	0.0060		mg/L	1	6/28/2021 11:04:06 AM	B79403
Iron	ND	0.010	0.020		mg/L	1	6/28/2021 11:04:06 AM	B79403
Manganese	ND	0.00058	0.0020		mg/L	1	6/28/2021 11:04:06 AM	B79403
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/28/2021 11:04:06 AM	B79403
Nickel	ND	0.0033	0.010		mg/L	1	6/28/2021 11:04:06 AM	B79403
Silver	ND	0.0013	0.0050		mg/L	1	6/28/2021 11:04:06 AM	B79403
Zinc	0.0091	0.0060	0.010	J	mg/L	1	6/28/2021 11:04:06 AM	B79403
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2021 4:26:16 PM	B79527
Arsenic	ND	0.00012	0.0010		mg/L	1	7/1/2021 4:26:16 PM	B79527
Lead	ND	0.000057	0.00050		mg/L	1	7/1/2021 4:26:16 PM	B79527
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2021 4:26:16 PM	B79527
Thallium	ND	0.00025	0.00025		mg/L	1	7/1/2021 4:26:16 PM	B79527
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/7/2021 4:43:18 PM	61150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021
Lab ID: 2106C55-012A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	5100	110	500		µg/L	500	6/30/2021 1:44:11 PM	R79505
Toluene	140	10	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Ethylbenzene	630	11	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Methyl tert-butyl ether (MTBE)	190	20	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,2,4-Trimethylbenzene	280	6.1	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,2-Dichloroethane (EDC)	ND	11	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,2-Dibromoethane (EDB)	ND	15	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Naphthalene	70	14	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1-Methylnaphthalene	ND	42	200		µg/L	50	6/30/2021 3:37:54 AM	R79445
2-Methylnaphthalene	ND	35	200		µg/L	50	6/30/2021 3:37:54 AM	R79445
Acetone	280	120	500	J	µg/L	50	6/30/2021 3:37:54 AM	R79445
Bromobenzene	ND	14	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Bromodichloromethane	ND	10	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Bromoform	ND	16	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Bromomethane	ND	78	150		µg/L	50	6/30/2021 3:37:54 AM	R79445
2-Butanone	160	56	500	J	µg/L	50	6/30/2021 3:37:54 AM	R79445
Carbon disulfide	ND	22	500		µg/L	50	6/30/2021 3:37:54 AM	R79445
Carbon Tetrachloride	ND	8.8	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Chlorobenzene	ND	6.8	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Chloroethane	ND	19	100		µg/L	50	6/30/2021 3:37:54 AM	R79445
Chloroform	ND	6.7	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Chloromethane	50	20	150	J	µg/L	50	6/30/2021 3:37:54 AM	R79445
2-Chlorotoluene	ND	6.6	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
4-Chlorotoluene	ND	26	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
cis-1,2-DCE	ND	19	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
cis-1,3-Dichloropropene	ND	18	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,2-Dibromo-3-chloropropane	ND	29	100		µg/L	50	6/30/2021 3:37:54 AM	R79445
Dibromochloromethane	ND	14	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Dibromomethane	ND	15	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,2-Dichlorobenzene	ND	7.7	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,3-Dichlorobenzene	ND	8.1	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,4-Dichlorobenzene	ND	10	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Dichlorodifluoromethane	ND	22	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,1-Dichloroethane	ND	14	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,1-Dichloroethene	ND	6.5	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,2-Dichloropropane	ND	6.7	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,3-Dichloropropane	ND	9.0	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
2,2-Dichloropropane	ND	13	100		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,1-Dichloropropene	ND	9.0	50		µg/L	50	6/30/2021 3:37:54 AM	R79445

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021
Lab ID: 2106C55-012A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	16	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
2-Hexanone	ND	90	500		µg/L	50	6/30/2021 3:37:54 AM	R79445
Isopropylbenzene	23	9.1	20		µg/L	50	6/30/2021 3:37:54 AM	R79445
4-Isopropyltoluene	ND	10	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
4-Methyl-2-pentanone	ND	56	500		µg/L	50	6/30/2021 3:37:54 AM	R79445
Methylene Chloride	ND	20	150		µg/L	50	6/30/2021 3:37:54 AM	R79445
n-Butylbenzene	ND	13	150		µg/L	50	6/30/2021 3:37:54 AM	R79445
n-Propylbenzene	64	9.1	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
sec-Butylbenzene	ND	30	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Styrene	ND	6.5	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
tert-Butylbenzene	ND	12	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,1,1,2-Tetrachloroethane	ND	13	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,1,2,2-Tetrachloroethane	ND	14	100		µg/L	50	6/30/2021 3:37:54 AM	R79445
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
trans-1,2-DCE	ND	24	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
trans-1,3-Dichloropropene	ND	17	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,2,3-Trichlorobenzene	ND	6.7	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,2,4-Trichlorobenzene	ND	12	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,1,1-Trichloroethane	ND	15	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,1,2-Trichloroethane	ND	9.4	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Trichloroethene (TCE)	ND	10	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Trichlorofluoromethane	ND	4.6	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
1,2,3-Trichloropropane	ND	22	100		µg/L	50	6/30/2021 3:37:54 AM	R79445
Vinyl chloride	ND	9.8	50		µg/L	50	6/30/2021 3:37:54 AM	R79445
Xylenes, Total	740	28	75		µg/L	50	6/30/2021 3:37:54 AM	R79445
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	50	6/30/2021 3:37:54 AM	R79445
Surr: 4-Bromofluorobenzene	111	0	70-130		%Rec	50	6/30/2021 3:37:54 AM	R79445
Surr: Dibromofluoromethane	100	0	70-130		%Rec	50	6/30/2021 3:37:54 AM	R79445
Surr: Toluene-d8	101	0	70-130		%Rec	50	6/30/2021 3:37:54 AM	R79445
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	17	1.4	2.5		mg/L	50	6/30/2021 3:37:54 AM	G79445
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	50	6/30/2021 3:37:54 AM	G79445

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Qualifiers:

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PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021
Lab ID: 2106C55-012B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.3	0.016	0.064		mg/L	1	6/30/2021 4:12:56 PM	60947
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/30/2021 4:12:56 PM	60947
Surr: DNOP	91.6	0	15-142		%Rec	1	6/30/2021 4:12:56 PM	60947

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Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021
Lab ID: 2106C55-012C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	6/29/2021 10:34:45 PM	60990

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Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021
Lab ID: 2106C55-012D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Azobenzene	ND	0.55	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Benzoic acid	ND	1.1	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Benzyl alcohol	ND	0.68	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Bis(2-ethylhexyl)phthalate	4.9	4.5	10	J	µg/L	1	7/7/2021 9:59:43 PM	60957
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Carbazole	4.0	0.56	5.0	J	µg/L	1	7/7/2021 9:59:43 PM	60957
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
4-Chloroaniline	ND	0.53	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
2-Chlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	7/7/2021 9:59:43 PM	60957
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	7/7/2021 9:59:43 PM	60957
Dibenzofuran	3.2	0.38	5.0	J	µg/L	1	7/7/2021 9:59:43 PM	60957
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
1,4-Dichlorobenzene	1.7	0.70	5.0	J	µg/L	1	7/7/2021 9:59:43 PM	60957
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Diethyl phthalate	ND	3.9	10		µg/L	1	7/7/2021 9:59:43 PM	60957
Dimethyl phthalate	ND	2.0	10		µg/L	1	7/7/2021 9:59:43 PM	60957
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
2,4-Dimethylphenol	5.8	0.97	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Hexachloroethane	ND	0.45	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Isophorone	ND	0.40	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
2-Methylphenol	1.6	0.51	5.0	J	µg/L	1	7/7/2021 9:59:43 PM	60957
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957

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J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
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S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021
Lab ID: 2106C55-012D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
2-Nitroaniline	ND	0.31	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
3-Nitroaniline	ND	1.6	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
4-Nitroaniline	ND	0.47	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Nitrobenzene	ND	0.51	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
2-Nitrophenol	ND	0.47	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
4-Nitrophenol	ND	0.28	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Pentachlorophenol	ND	0.59	20		µg/L	1	7/7/2021 9:59:43 PM	60957
Phenol	51	0.33	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Pyridine	ND	0.93	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	7/7/2021 9:59:43 PM	60957
Surr: 2-Fluorophenol	46.1	0	15-88.8		%Rec	1	7/7/2021 9:59:43 PM	60957
Surr: Phenol-d5	34.8	0	15-71.9		%Rec	1	7/7/2021 9:59:43 PM	60957
Surr: 2,4,6-Tribromophenol	53.6	0	15-97.4		%Rec	1	7/7/2021 9:59:43 PM	60957
Surr: Nitrobenzene-d5	53.9	0	15-117		%Rec	1	7/7/2021 9:59:43 PM	60957
Surr: 2-Fluorobiphenyl	50.7	0	15-100		%Rec	1	7/7/2021 9:59:43 PM	60957
Surr: 4-Terphenyl-d14	54.6	0	15-120		%Rec	1	7/7/2021 9:59:43 PM	60957
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	37	0.67	2.0		µg/L	20	7/9/2021 7:29:00 AM	60905
1-Methylnaphthalene	5.2	0.024	0.10		µg/L	1	7/7/2021 5:08:00 PM	60905
2-Methylnaphthalene	5.7	0.034	0.10		µg/L	1	7/7/2021 5:08:00 PM	60905
Acenaphthylene	ND	0.043	0.10		µg/L	1	7/7/2021 5:08:00 PM	60905
Acenaphthene	1.9	0.031	0.10		µg/L	1	7/7/2021 5:08:00 PM	60905
Fluorene	0.40	0.031	0.10		µg/L	1	7/7/2021 5:08:00 PM	60905
Phenanthrene	0.18	0.057	0.10		µg/L	1	7/7/2021 5:08:00 PM	60905
Anthracene	0.42	0.034	0.10		µg/L	1	7/7/2021 5:08:00 PM	60905
Fluoranthene	ND	0.10	0.20		µg/L	1	7/7/2021 5:08:00 PM	60905
Pyrene	0.32	0.16	0.20		µg/L	1	7/7/2021 5:08:00 PM	60905
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	7/7/2021 5:08:00 PM	60905
Chrysene	ND	0.024	0.10		µg/L	1	7/7/2021 5:08:00 PM	60905
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	7/7/2021 5:08:00 PM	60905
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	7/7/2021 5:08:00 PM	60905
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	7/7/2021 5:08:00 PM	60905
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	7/7/2021 5:08:00 PM	60905
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	7/7/2021 5:08:00 PM	60905
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	7/7/2021 5:08:00 PM	60905
Surr: Nitrobenzene-d5	64.0	0	26.3-112		%Rec	1	7/7/2021 5:08:00 PM	60905
Surr: 2-Fluorobiphenyl	54.5	0	21.1-110		%Rec	1	7/7/2021 5:08:00 PM	60905

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021
Lab ID: 2106C55-012D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	90.5	0	17.6-167		%Rec	1	7/7/2021 5:08:00 PM	60905

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021
Lab ID: 2106C55-012E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.64	0.056	0.10		mg/L	1	6/24/2021 6:22:07 PM	R79334
Chloride	360	12	25	*	mg/L	50	7/6/2021 5:13:12 PM	R79589
Nitrogen, Nitrite (As N)	ND	0.015	0.10		mg/L	1	6/24/2021 6:22:07 PM	R79334
Bromide	0.88	0.050	0.10		mg/L	1	6/24/2021 6:22:07 PM	R79334
Nitrogen, Nitrate (As N)	0.30	0.020	0.10		mg/L	1	6/24/2021 6:22:07 PM	R79334
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	6/24/2021 6:22:07 PM	R79334
Sulfate	0.37	0.25	0.50	J	mg/L	1	6/24/2021 6:22:07 PM	R79334

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021
Lab ID: 2106C55-012F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	27	0.37	1.0	*	mg/L	50	7/1/2021 9:11:50 AM	61019
Barium	5.5	0.016	0.030	*	mg/L	10	6/30/2021 1:57:06 PM	61019
Beryllium	ND	0.00088	0.0020		mg/L	1	6/30/2021 1:55:45 PM	61019
Boron	0.34	0.0074	0.040		mg/L	1	6/30/2021 1:55:45 PM	61019
Cadmium	ND	0.0015	0.0020		mg/L	1	6/30/2021 1:55:45 PM	61019
Calcium	290	1.1	10		mg/L	10	6/30/2021 1:57:06 PM	61019
Chromium	0.010	0.0021	0.0060		mg/L	1	6/30/2021 1:55:45 PM	61019
Cobalt	0.014	0.0024	0.0060		mg/L	1	6/30/2021 1:55:45 PM	61019
Copper	0.013	0.0047	0.0060		mg/L	1	6/30/2021 1:55:45 PM	61019
Iron	17	0.64	2.5	*	mg/L	50	7/1/2021 9:11:50 AM	61019
Magnesium	74	0.067	1.0		mg/L	1	6/30/2021 1:55:45 PM	61019
Manganese	5.5	0.0081	0.020	*	mg/L	10	6/30/2021 1:57:06 PM	61019
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/30/2021 1:55:45 PM	61019
Nickel	0.014	0.0033	0.010		mg/L	1	6/30/2021 1:55:45 PM	61019
Potassium	2.6	0.16	1.0		mg/L	1	6/30/2021 1:55:45 PM	61019
Silver	ND	0.0013	0.0050		mg/L	1	6/30/2021 1:55:45 PM	61019
Sodium	250	1.9	10		mg/L	10	6/30/2021 1:57:06 PM	61019
Zinc	0.024	0.0064	0.010		mg/L	1	6/30/2021 1:55:45 PM	61019
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/2/2021 1:04:27 PM	61019
Arsenic	0.0050	0.00013	0.0010		mg/L	1	7/2/2021 1:04:27 PM	61019
Lead	0.015	0.000061	0.00050		mg/L	1	7/2/2021 1:04:27 PM	61019
Selenium	0.0025	0.00037	0.0010		mg/L	1	7/2/2021 1:04:27 PM	61019
Thallium	ND	0.00025	0.00025		mg/L	1	7/2/2021 1:04:27 PM	61019
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/30/2021 2:07:14 PM	61000

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/23/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/23/2021
Lab ID: 2106C55-012G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.19	0.0056	0.020		mg/L	1	6/28/2021 11:08:55 AM	B79403
Barium	2.7	0.0056	0.010	*	mg/L	5	6/28/2021 11:10:15 AM	B79403
Beryllium	ND	0.00088	0.0020		mg/L	1	6/28/2021 11:08:55 AM	B79403
Boron	0.33	0.0067	0.040		mg/L	1	6/28/2021 11:08:55 AM	B79403
Cadmium	ND	0.0012	0.0020		mg/L	1	6/28/2021 11:08:55 AM	B79403
Chromium	ND	0.0020	0.0060		mg/L	1	6/28/2021 11:08:55 AM	B79403
Cobalt	0.0026	0.0024	0.0060	J	mg/L	1	6/28/2021 11:08:55 AM	B79403
Copper	ND	0.0035	0.0060		mg/L	1	6/28/2021 11:08:55 AM	B79403
Iron	5.2	0.10	0.20	*	mg/L	10	6/28/2021 11:56:00 AM	B79403
Manganese	3.2	0.0029	0.010	*	mg/L	5	6/28/2021 11:10:15 AM	B79403
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/28/2021 11:08:55 AM	B79403
Nickel	ND	0.0033	0.010		mg/L	1	6/28/2021 11:08:55 AM	B79403
Silver	ND	0.0013	0.0050		mg/L	1	6/28/2021 11:08:55 AM	B79403
Zinc	0.0072	0.0060	0.010	J	mg/L	1	6/28/2021 11:08:55 AM	B79403
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	7/1/2021 4:31:00 PM	B79527
Arsenic	0.00056	0.00012	0.0010	J	mg/L	1	7/1/2021 4:31:00 PM	B79527
Lead	0.00055	0.000057	0.00050		mg/L	1	7/1/2021 4:31:00 PM	B79527
Selenium	ND	0.00034	0.0010		mg/L	1	7/1/2021 4:31:00 PM	B79527
Thallium	ND	0.00025	0.00025		mg/L	1	7/1/2021 4:31:00 PM	B79527
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/7/2021 4:50:25 PM	61150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2106C55-013A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.36	0.23	1.0	J	µg/L	1	6/30/2021 4:05:11 AM	R79445
Toluene	ND	0.20	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Naphthalene	ND	0.28	2.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Acetone	ND	2.3	10		µg/L	1	6/30/2021 4:05:11 AM	R79445
Bromobenzene	ND	0.28	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Bromoform	ND	0.31	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Bromomethane	ND	1.6	3.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
2-Butanone	ND	1.1	10		µg/L	1	6/30/2021 4:05:11 AM	R79445
Carbon disulfide	ND	0.44	10		µg/L	1	6/30/2021 4:05:11 AM	R79445
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Chloroethane	ND	0.38	2.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Chloroform	ND	0.13	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Chloromethane	ND	0.40	3.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Dibromomethane	ND	0.31	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2106C55-013A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
2-Hexanone	ND	1.8	10		µg/L	1	6/30/2021 4:05:11 AM	R79445
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/30/2021 4:05:11 AM	R79445
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Styrene	ND	0.13	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/30/2021 4:05:11 AM	R79445
Xylenes, Total	ND	0.55	1.5		µg/L	1	6/30/2021 4:05:11 AM	R79445
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	6/30/2021 4:05:11 AM	R79445
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	6/30/2021 4:05:11 AM	R79445
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	6/30/2021 4:05:11 AM	R79445
Surr: Toluene-d8	100	0	70-130		%Rec	1	6/30/2021 4:05:11 AM	R79445
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.028	0.050		mg/L	1	6/30/2021 4:05:11 AM	G79445
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	6/30/2021 4:05:11 AM	G79445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106C55**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2106C55-013B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	6/29/2021 11:04:56 PM	60990

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **A79403**	RunNo: **79403**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2790938** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **A79403**	RunNo: **79403**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2790940** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.011	0.020	0.01000	0	106	50	150			J
Barium	0.0020	0.0030	0.002000	0	98.2	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	104	50	150			
Boron	0.038	0.040	0.04000	0	95.9	50	150			J
Cadmium	0.0016	0.0020	0.002000	0	78.7	50	150			J
Chromium	0.0053	0.0060	0.006000	0	88.3	50	150			J
Cobalt	0.0054	0.0060	0.006000	0	89.7	50	150			J
Copper	0.0052	0.0060	0.006000	0	86.8	50	150			J
Iron	0.021	0.050	0.02000	0	103	50	150			J
Manganese	0.0022	0.0020	0.002000	0	108	50	150			
Molybdenum	0.0074	0.0080	0.008000	0	92.0	50	150			J
Nickel	0.0028	0.010	0.005000	0	56.0	50	150			J
Silver	0.0046	0.0050	0.005000	0	92.4	50	150			J
Zinc	0.012	0.010	0.01000	0	116	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **A79403**	RunNo: **79403**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2790942** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **A79403**	RunNo: **79403**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2790942** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.57	0.020	0.5000	0	115	85	115			
Barium	0.49	0.0030	0.5000	0	98.5	85	115			
Beryllium	0.51	0.0020	0.5000	0	101	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.0	85	115			
Chromium	0.48	0.0060	0.5000	0	95.6	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.3	85	115			
Copper	0.49	0.0060	0.5000	0	98.7	85	115			
Iron	0.51	0.050	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.7	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.47	0.010	0.5000	0	94.5	85	115			
Silver	0.098	0.0050	0.1000	0	97.7	85	115			
Zinc	0.50	0.010	0.5000	0	99.5	85	115			

Sample ID: **MB-61019**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **61019**	RunNo: **79474**
Prep Date: **6/29/2021**	Analysis Date: **6/30/2021**	SeqNo: **2793980** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LLLCS-61019** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **61019** RunNo: **79474**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2793981** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.010	0.020	0.01000	0	101	50	150			J
Barium	0.0020	0.0030	0.002000	0	99.0	50	150			J
Beryllium	0.0023	0.0020	0.002000	0	113	50	150			
Boron	0.040	0.040	0.04000	0	101	50	150			
Cadmium	0.0020	0.0020	0.002000	0	102	50	150			
Calcium	0.49	1.0	0.5000	0	97.5	50	150			J
Chromium	0.0065	0.0060	0.006000	0	108	50	150			
Cobalt	0.0060	0.0060	0.006000	0	100	50	150			
Copper	0.0060	0.0060	0.006000	0	100	50	150			
Iron	0.022	0.050	0.02000	0	111	50	150			J
Magnesium	0.49	1.0	0.5000	0	98.8	50	150			J
Manganese	0.0020	0.0020	0.002000	0	99.5	50	150			J
Molybdenum	0.0090	0.0080	0.008000	0	112	50	150			
Nickel	0.0064	0.010	0.005000	0	127	50	150			J
Potassium	0.47	1.0	0.5000	0	94.6	50	150			J
Silver	0.0049	0.0050	0.005000	0	98.9	50	150			J
Sodium	0.53	1.0	0.5000	0	106	50	150			J
Zinc	0.011	0.010	0.01000	0	113	50	150			

Sample ID: **LCS-61019** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **61019** RunNo: **79474**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2793982** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	112	85	115			
Barium	0.49	0.0030	0.5000	0	98.8	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Boron	0.52	0.040	0.5000	0	104	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.8	85	115			
Calcium	50	1.0	50.00	0	99.5	85	115			
Chromium	0.50	0.0060	0.5000	0	99.3	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.1	85	115			
Copper	0.50	0.0060	0.5000	0	99.7	85	115			
Iron	0.49	0.050	0.5000	0	98.9	85	115			
Magnesium	50	1.0	50.00	0	99.4	85	115			
Manganese	0.49	0.0020	0.5000	0	98.1	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.48	0.010	0.5000	0	96.4	85	115			
Potassium	49	1.0	50.00	0	98.6	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LCS-61019** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **61019** RunNo: **79474**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2793982** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	102	85	115			
Sodium	50	1.0	50.00	0	99.8	85	115			
Zinc	0.47	0.010	0.5000	0	94.6	85	115			

Sample ID: **2106C55-002EMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **NAPIS-1** Batch ID: **61019** RunNo: **79474**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2794107** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.69	0.020	0.5000	0.02281	133	70	130			S
Beryllium	0.51	0.0020	0.5000	0	102	70	130			
Cadmium	0.47	0.0020	0.5000	0	93.0	70	130			
Chromium	0.47	0.0060	0.5000	0	93.5	70	130			
Cobalt	0.46	0.0060	0.5000	0	92.4	70	130			
Copper	0.52	0.0060	0.5000	0	105	70	130			
Magnesium	70	1.0	50.00	17.77	105	70	130			
Molybdenum	0.52	0.0080	0.5000	0.01547	102	70	130			
Nickel	0.46	0.010	0.5000	0.01079	90.7	70	130			
Potassium	55	1.0	50.00	0.3128	109	70	130			
Silver	0.099	0.0050	0.1000	0	98.9	70	130			
Zinc	0.49	0.010	0.5000	0	97.1	70	130			

Sample ID: **2106C55-002EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **NAPIS-1** Batch ID: **61019** RunNo: **79474**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2794108** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.67	0.020	0.5000	0.02281	130	70	130	2.51	20	
Beryllium	0.49	0.0020	0.5000	0	97.4	70	130	4.86	20	
Cadmium	0.45	0.0020	0.5000	0	90.2	70	130	3.08	20	
Chromium	0.45	0.0060	0.5000	0	90.7	70	130	3.11	20	
Cobalt	0.45	0.0060	0.5000	0	89.3	70	130	3.38	20	
Copper	0.51	0.0060	0.5000	0	103	70	130	2.25	20	
Magnesium	67	1.0	50.00	17.77	97.7	70	130	5.11	20	
Molybdenum	0.51	0.0080	0.5000	0.01547	98.1	70	130	3.34	20	
Nickel	0.45	0.010	0.5000	0.01079	87.0	70	130	4.07	20	
Potassium	53	1.0	50.00	0.3128	104	70	130	4.52	20	
Silver	0.096	0.0050	0.1000	0	95.6	70	130	3.34	20	
Zinc	0.47	0.010	0.5000	0	94.2	70	130	2.99	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **2106C55-002EMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **NAPIS-1** Batch ID: **61019** RunNo: **79474**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2794110** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	4.2	0.015	0.5000	3.655	105	70	130			
Boron	1.3	0.20	0.5000	0.7746	98.5	70	130			
Calcium	120	5.0	50.00	78.69	90.2	70	130			
Manganese	2.5	0.010	0.5000	1.953	104	70	130			
Sodium	400	5.0	50.00	359.1	91.5	70	130			

Sample ID: **2106C55-002EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **NAPIS-1** Batch ID: **61019** RunNo: **79474**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2794111** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	4.1	0.015	0.5000	3.655	84.4	70	130	2.53	20	
Boron	1.2	0.20	0.5000	0.7746	92.2	70	130	2.50	20	
Calcium	120	5.0	50.00	78.69	92.0	70	130	0.724	20	
Manganese	2.4	0.010	0.5000	1.953	91.7	70	130	2.54	20	
Sodium	400	5.0	50.00	359.1	90.5	70	130	0.119	20	

Sample ID: **2106C55-003EMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-58A** Batch ID: **61019** RunNo: **79474**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2794119** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.48	0.0020	0.5000	0	96.7	70	130			
Boron	0.96	0.040	0.5000	0.4679	98.5	70	130			
Cadmium	0.44	0.0020	0.5000	0	88.9	70	130			
Chromium	0.45	0.0060	0.5000	0	90.3	70	130			
Cobalt	0.44	0.0060	0.5000	0	87.1	70	130			
Copper	0.52	0.0060	0.5000	0	103	70	130			
Molybdenum	0.49	0.0080	0.5000	0	97.0	70	130			
Nickel	0.46	0.010	0.5000	0.02989	86.3	70	130			
Silver	0.096	0.0050	0.1000	0	96.3	70	130			
Zinc	0.47	0.010	0.5000	0	93.0	70	130			

Sample ID: **2106C55-003EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-58A** Batch ID: **61019** RunNo: **79474**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2794120** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.49	0.0020	0.5000	0	97.8	70	130	1.15	20	
Boron	0.97	0.040	0.5000	0.4679	101	70	130	1.23	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **2106C55-003EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-58A** Batch ID: **61019** RunNo: **79474**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2794120** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.45	0.0020	0.5000	0	89.9	70	130	1.12	20	
Chromium	0.45	0.0060	0.5000	0	90.8	70	130	0.588	20	
Cobalt	0.44	0.0060	0.5000	0	88.5	70	130	1.65	20	
Copper	0.52	0.0060	0.5000	0	104	70	130	1.12	20	
Molybdenum	0.49	0.0080	0.5000	0	98.3	70	130	1.36	20	
Nickel	0.46	0.010	0.5000	0.02989	86.6	70	130	0.324	20	
Silver	0.097	0.0050	0.1000	0	97.3	70	130	0.970	20	
Zinc	0.47	0.010	0.5000	0	93.3	70	130	0.251	20	

Sample ID: **2106C55-003EMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-58A** Batch ID: **61019** RunNo: **79474**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2794122** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	3.3	0.10	0.5000	2.118	233	70	130			S
Barium	1.3	0.015	0.5000	0.8019	99.3	70	130			
Iron	5.3	0.25	0.5000	4.667	117	70	130			E
Manganese	1.7	0.010	0.5000	1.248	92.4	70	130			

Sample ID: **2106C55-003EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **OW-58A** Batch ID: **61019** RunNo: **79474**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2794123** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	3.1	0.10	0.5000	2.118	203	70	130	4.64	20	S
Barium	1.3	0.015	0.5000	0.8019	93.7	70	130	2.16	20	
Iron	4.9	0.25	0.5000	4.667	50.6	70	130	6.55	20	S
Manganese	1.7	0.010	0.5000	1.248	87.7	70	130	1.36	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A79403**	RunNo: **79403**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2790939** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A79403**	RunNo: **79403**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2790941** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.011	0.020	0.01000	0	106	50	150			J
Barium	0.0020	0.0020	0.002000	0	98.2	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	104	50	150			
Boron	0.038	0.040	0.04000	0	95.9	50	150			J
Cadmium	0.0016	0.0020	0.002000	0	78.7	50	150			J
Chromium	0.0053	0.0060	0.006000	0	88.3	50	150			J
Cobalt	0.0054	0.0060	0.006000	0	89.7	50	150			J
Copper	0.0052	0.0060	0.006000	0	86.8	50	150			J
Iron	0.021	0.020	0.02000	0	103	50	150			
Manganese	0.0022	0.0020	0.002000	0	108	50	150			
Molybdenum	0.0074	0.0080	0.008000	0	92.0	50	150			J
Nickel	0.0028	0.010	0.005000	0	56.0	50	150			J
Silver	0.0046	0.0050	0.005000	0	92.4	50	150			J
Zinc	0.012	0.010	0.01000	0	116	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A79403**	RunNo: **79403**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2790943** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A79403** RunNo: **79403**
Prep Date: Analysis Date: **6/28/2021** SeqNo: **2790943** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.57	0.020	0.5000	0	115	85	115			
Barium	0.49	0.0020	0.5000	0	98.5	85	115			
Beryllium	0.51	0.0020	0.5000	0	101	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.0	85	115			
Chromium	0.48	0.0060	0.5000	0	95.6	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.3	85	115			
Copper	0.49	0.0060	0.5000	0	98.7	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.7	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.47	0.010	0.5000	0	94.5	85	115			
Silver	0.098	0.0050	0.1000	0	97.7	85	115			
Zinc	0.50	0.010	0.5000	0	99.5	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B79403** RunNo: **79403**
Prep Date: Analysis Date: **6/28/2021** SeqNo: **2790944** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B79403** RunNo: **79403**
Prep Date: Analysis Date: **6/28/2021** SeqNo: **2790945** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B79403**	RunNo: **79403**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2790945** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.010	0.020	0.01000	0	105	50	150			J
Barium	0.0019	0.0020	0.002000	0	95.4	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	107	50	150			
Boron	0.039	0.040	0.04000	0	98.4	50	150			J
Cadmium	0.0020	0.0020	0.002000	0	98.8	50	150			J
Chromium	0.0063	0.0060	0.006000	0	104	50	150			
Cobalt	0.0056	0.0060	0.006000	0	93.1	50	150			J
Copper	0.0055	0.0060	0.006000	0	91.1	50	150			J
Iron	0.018	0.020	0.02000	0	89.9	50	150			J
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Molybdenum	0.0066	0.0080	0.008000	0	83.0	50	150			J
Silver	0.0047	0.0050	0.005000	0	93.3	50	150			J
Zinc	0.010	0.010	0.01000	0	103	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B79403**	RunNo: **79403**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2790946** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	112	85	115			
Barium	0.50	0.0020	0.5000	0	99.4	85	115			
Beryllium	0.51	0.0020	0.5000	0	101	85	115			
Boron	0.51	0.040	0.5000	0	103	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	96.7	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.1	85	115			
Copper	0.48	0.0060	0.5000	0	95.1	85	115			
Iron	0.49	0.020	0.5000	0	98.6	85	115			
Manganese	0.48	0.0020	0.5000	0	96.0	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.47	0.010	0.5000	0	94.9	85	115			
Silver	0.097	0.0050	0.1000	0	96.8	85	115			
Zinc	0.52	0.010	0.5000	0	103	85	115			

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B79403**	RunNo: **79403**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2790950** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.0031	0.010	0.005000	0	61.1	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **2106C55-011FMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 6/23/2021** Batch ID: **B79403** RunNo: **79403**
Prep Date: Analysis Date: **6/28/2021** SeqNo: **2791011** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.60	0.020	0.5000	0	119	70	130			
Barium	0.50	0.0020	0.5000	0	99.6	70	130			
Beryllium	0.52	0.0020	0.5000	0	105	70	130			
Boron	0.54	0.040	0.5000	0	108	70	130			
Cadmium	0.50	0.0020	0.5000	0	101	70	130			
Chromium	0.49	0.0060	0.5000	0	98.0	70	130			
Cobalt	0.48	0.0060	0.5000	0	95.9	70	130			
Copper	0.51	0.0060	0.5000	0	102	70	130			
Iron	0.51	0.020	0.5000	0	102	70	130			
Manganese	0.49	0.0020	0.5000	0	98.6	70	130			
Molybdenum	0.51	0.0080	0.5000	0	102	70	130			
Nickel	0.48	0.010	0.5000	0	96.0	70	130			
Silver	0.10	0.0050	0.1000	0	100	70	130			
Zinc	0.52	0.010	0.5000	0.009054	102	70	130			

Sample ID: **2106C55-011FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 6/23/2021** Batch ID: **B79403** RunNo: **79403**
Prep Date: Analysis Date: **6/28/2021** SeqNo: **2791012** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.60	0.020	0.5000	0	121	70	130	1.05	20	
Barium	0.52	0.0020	0.5000	0	104	70	130	4.12	20	
Beryllium	0.56	0.0020	0.5000	0	112	70	130	6.57	20	
Boron	0.56	0.040	0.5000	0	112	70	130	4.11	20	
Cadmium	0.53	0.0020	0.5000	0	105	70	130	4.15	20	
Chromium	0.51	0.0060	0.5000	0	102	70	130	4.08	20	
Cobalt	0.50	0.0060	0.5000	0	100	70	130	4.58	20	
Copper	0.52	0.0060	0.5000	0	104	70	130	1.83	20	
Iron	0.52	0.020	0.5000	0	104	70	130	1.90	20	
Manganese	0.51	0.0020	0.5000	0	102	70	130	3.18	20	
Molybdenum	0.53	0.0080	0.5000	0	106	70	130	4.01	20	
Nickel	0.50	0.010	0.5000	0	100	70	130	4.22	20	
Silver	0.10	0.0050	0.1000	0	104	70	130	4.30	20	
Zinc	0.54	0.010	0.5000	0.009054	105	70	130	3.46	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB-61019** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **61019** RunNo: **79494**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2794776** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: **MSLLLCS-61019** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **61019** RunNo: **79494**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2794777** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00086	0.0010	0.001000	0	85.7	50	150			J
Arsenic	0.00094	0.0010	0.001000	0	94.1	50	150			J
Lead	0.00047	0.00050	0.0005000	0	93.9	50	150			J
Selenium	0.00076	0.0010	0.001000	0	76.3	50	150			J

Sample ID: **MSLCS-61019** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **61019** RunNo: **79494**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2794778** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.7	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.1	85	115			
Lead	0.012	0.00050	0.01250	0	95.7	85	115			
Selenium	0.023	0.0010	0.02500	0	91.2	85	115			
Thallium	0.012	0.00025	0.01250	0	95.3	85	115			

Sample ID: **MSLLLCS-TL-61019** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **61019** RunNo: **79494**
Prep Date: **6/29/2021** Analysis Date: **6/30/2021** SeqNo: **2794779** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	0.00023	0.00025	0.0002500	0	92.2	50	150			J

Sample ID: **2106C55-001EMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-10** Batch ID: **61019** RunNo: **79569**
Prep Date: **6/29/2021** Analysis Date: **7/2/2021** SeqNo: **2798274** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	109	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **2106C55-001EMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-10** Batch ID: **61019** RunNo: **79569**
Prep Date: **6/29/2021** Analysis Date: **7/2/2021** SeqNo: **2798274** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.043	0.0010	0.02500	0.01122	126	70	130			
Lead	0.011	0.00050	0.01250	0.0003095	86.6	70	130			
Selenium	0.030	0.0010	0.02500	0	118	70	130			
Thallium	0.011	0.00025	0.01250	0	91.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B79527** RunNo: **79527**
Prep Date: Analysis Date: **7/1/2021** SeqNo: **2796003** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B79527** RunNo: **79527**
Prep Date: Analysis Date: **7/1/2021** SeqNo: **2796004** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	105	50	150			
Arsenic	0.00091	0.0010	0.001000	0	91.4	50	150			J
Lead	0.00050	0.00050	0.0005000	0	100	50	150			
Selenium	0.0010	0.0010	0.001000	0	103	50	150			
Thallium	0.00049	0.00025	0.0005000	0	98.3	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B79527** RunNo: **79527**
Prep Date: Analysis Date: **7/1/2021** SeqNo: **2796005** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.6	85	115			
Arsenic	0.024	0.0010	0.02500	0	95.4	85	115			
Lead	0.012	0.00050	0.01250	0	94.6	85	115			
Selenium	0.025	0.0010	0.02500	0	98.6	85	115			
Thallium	0.012	0.00025	0.01250	0	95.1	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB-61000**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **61000**	RunNo: **79504**							
Prep Date: **6/29/2021**	Analysis Date: **6/30/2021**	SeqNo: **2795173**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCS-61000**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **61000**	RunNo: **79504**							
Prep Date: **6/29/2021**	Analysis Date: **6/30/2021**	SeqNo: **2795175**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.00020	0.005000	0	93.5	85	115			

Sample ID: **lllcs-61000**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **61000**	RunNo: **79504**							
Prep Date: **6/29/2021**	Analysis Date: **6/30/2021**	SeqNo: **2795176**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.000085	0.00020	0.0001500	0	56.9	50	150			J

Sample ID: **MB-61150**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **PBW**	Batch ID: **61150**	RunNo: **79640**							
Prep Date: **7/6/2021**	Analysis Date: **7/7/2021**	SeqNo: **2801018**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-61150**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **BatchQC**	Batch ID: **61150**	RunNo: **79640**							
Prep Date: **7/6/2021**	Analysis Date: **7/7/2021**	SeqNo: **2801019**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00011	0.00020	0.0001500	0	75.3	50	150			J

Sample ID: **LCS-61150**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**							
Client ID: **LCSW**	Batch ID: **61150**	RunNo: **79640**							
Prep Date: **7/6/2021**	Analysis Date: **7/7/2021**	SeqNo: **2801020**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	96.1	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **2106C55-003FMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **OW-58A** Batch ID: **61150** RunNo: **79640**
Prep Date: **7/6/2021** Analysis Date: **7/7/2021** SeqNo: **2801061** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0045	0.0010	0.005000	0	90.3	75	125			

Sample ID: **2106C55-003FMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **OW-58A** Batch ID: **61150** RunNo: **79640**
Prep Date: **7/6/2021** Analysis Date: **7/7/2021** SeqNo: **2801064** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.0010	0.005000	0	95.5	75	125	5.64	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**

26-Jul-21

Client: Marathon

Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R79334**	RunNo: **79334**
Prep Date:	Analysis Date: **6/24/2021**	SeqNo: **2788423** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R79334**	RunNo: **79334**
Prep Date:	Analysis Date: **6/24/2021**	SeqNo: **2788431** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Chloride	4.7	0.50	5.000	0	93.2	90	110			
Nitrogen, Nitrite (As N)	0.94	0.10	1.000	0	94.4	90	110			
Bromide	2.4	0.10	2.500	0	96.6	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	97.6	90	110			
Phosphorus, Orthophosphate (As P	4.5	0.50	5.000	0	90.3	90	110			
Sulfate	9.5	0.50	10.00	0	95.0	90	110			

Sample ID: **2106C55-011DMS**	SampType: **ms**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 6/23/2021**	Batch ID: **R79334**	RunNo: **79334**
Prep Date:	Analysis Date: **6/24/2021**	SeqNo: **2788458** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	108	73.3	111			
Chloride	4.7	0.50	5.000	0	94.2	84.2	117			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.4	75.5	113			
Bromide	2.4	0.10	2.500	0	97.4	85.9	106			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.04260	98.8	86.8	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.9	70.5	118			
Sulfate	9.6	0.50	10.00	0	95.8	83.3	112			

Sample ID: **2106C55-011DMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 6/23/2021**	Batch ID: **R79334**	RunNo: **79334**
Prep Date:	Analysis Date: **6/24/2021**	SeqNo: **2788459** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.55	0.10	0.5000	0	109	73.3	111	1.22	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **2106C55-011DMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 6/23/2021**	Batch ID: **R79334**	RunNo: **79334**
Prep Date:	Analysis Date: **6/24/2021**	SeqNo: **2788459** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.4	84.2	117	1.19	20	
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	96.5	75.5	113	1.19	20	
Bromide	2.5	0.10	2.500	0	98.2	85.9	106	0.789	20	
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.04260	98.7	86.8	110	0.0717	20	
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.9	70.5	118	1.05	20	
Sulfate	9.7	0.50	10.00	0	96.6	83.3	112	0.753	20	

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R79574**	RunNo: **79574**
Prep Date:	Analysis Date: **7/2/2021**	SeqNo: **2798435** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R79574**	RunNo: **79574**
Prep Date:	Analysis Date: **7/2/2021**	SeqNo: **2798436** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.4	90	110			

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R79589**	RunNo: **79589**
Prep Date:	Analysis Date: **7/6/2021**	SeqNo: **2799528** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R79589**	RunNo: **79589**
Prep Date:	Analysis Date: **7/6/2021**	SeqNo: **2799529** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	92.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB-60990** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **60990** RunNo: **79457**
Prep Date: **6/29/2021** Analysis Date: **6/29/2021** SeqNo: **2792872** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-60990** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **60990** RunNo: **79457**
Prep Date: **6/29/2021** Analysis Date: **6/29/2021** SeqNo: **2792874** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	106	70	130			

Sample ID: **LCSD-60990** SampType: **LCSD** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02** Batch ID: **60990** RunNo: **79457**
Prep Date: **6/29/2021** Analysis Date: **6/29/2021** SeqNo: **2792876** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	104	70	130	1.87	20	

Sample ID: **MB-60990** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **60990** RunNo: **79457**
Prep Date: **6/29/2021** Analysis Date: **6/29/2021** SeqNo: **2792920** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB-60947** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **60947** RunNo: **79521**
Prep Date: **6/26/2021** Analysis Date: **6/30/2021** SeqNo: **2796408** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.049	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.040		0.03750		105	15	142			

Sample ID: **MB-60941** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **60941** RunNo: **79521**
Prep Date: **6/26/2021** Analysis Date: **6/30/2021** SeqNo: **2796409** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.038	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.037		0.03750		98.4	15	142			

Sample ID: **LCS-60947** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **60947** RunNo: **79521**
Prep Date: **6/26/2021** Analysis Date: **6/30/2021** SeqNo: **2796410** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	62.1	21.1	126			
Surr: DNOP	0.022		0.01875		117	15	142			

Sample ID: **LCS-60941** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **60941** RunNo: **79521**
Prep Date: **6/26/2021** Analysis Date: **6/30/2021** SeqNo: **2796411** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	58.0	21.1	126			
Surr: DNOP	0.020		0.01875		107	15	142			

Sample ID: **LCSD-60947** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **60947** RunNo: **79521**
Prep Date: **6/26/2021** Analysis Date: **6/30/2021** SeqNo: **2796412** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	65.2	21.1	126	4.97	20	
Surr: DNOP	0.023		0.01875		124	15	142	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LCSD-60941** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **60941** RunNo: **79521**
Prep Date: **6/26/2021** Analysis Date: **6/30/2021** SeqNo: **2796413** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	62.8	21.1	126	7.91	20	
Surr: DNOP	0.022		0.01875		118	15	142	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **B79410**	RunNo: **79410**
Prep Date:	Analysis Date: **6/25/2021**	SeqNo: **2791225** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130			
Toluene	20	1.0	20.00	0	99.3	70	130			
Chlorobenzene	19	1.0	20.00	0	97.3	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	96.2	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	97.4	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.0	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.6		10.00		95.9	70	130			

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B79410**	RunNo: **79410**
Prep Date:	Analysis Date: **6/25/2021**	SeqNo: **2791282** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **mb2** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **B79410** RunNo: **79410**
Prep Date: Analysis Date: **6/25/2021** SeqNo: **2791282** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B79410**	RunNo: **79410**
Prep Date:	Analysis Date: **6/25/2021**	SeqNo: **2791282** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.7		10.00		97.0	70	130			

Sample ID: **100ng lcs4**	SampType: **LCS4**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **BatchQC**	Batch ID: **A79429**	RunNo: **79429**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2792214** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.9	70	130			
Toluene	19	1.0	20.00	0	97.3	70	130			
Ethylbenzene	19	1.0	20.00	0	93.8	70	130			
Xylenes, Total	58	1.5	60.00	0	96.9	70	130			
Surr: 1,2-Dichloroethane-d4	9.4		10.00		94.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.6	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.5	70	130			
Surr: Toluene-d8	9.7		10.00		97.0	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A79429**	RunNo: **79429**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2792217** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.3		10.00		92.5	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			
Surr: Dibromofluoromethane	9.3		10.00		93.4	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R79445**	RunNo: **79445**
Prep Date:	Analysis Date: **6/29/2021**	SeqNo: **2793616** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R79445** RunNo: **79445**
Prep Date: Analysis Date: **6/29/2021** SeqNo: **2793616** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	21	1.0	20.00	0	104	70	130			
Chlorobenzene	21	1.0	20.00	0	106	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	102	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		111	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.6		10.00		96.5	70	130			

Sample ID: **2106c55-009a ms** SampType: **MS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-35** Batch ID: **R79445** RunNo: **79445**
Prep Date: Analysis Date: **6/30/2021** SeqNo: **2793619** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5700	10	200.0	5241	205	70	130			ES
Toluene	360	10	200.0	168.9	96.8	70	130			
Chlorobenzene	190	10	200.0	0	94.7	70	130			
1,1-Dichloroethene	200	10	200.0	0	99.5	70	130			
Trichloroethene (TCE)	200	10	200.0	0	98.1	70	130			
Surr: 1,2-Dichloroethane-d4	110		100.0		108	70	130			
Surr: 4-Bromofluorobenzene	100		100.0		101	70	130			
Surr: Dibromofluoromethane	100		100.0		102	70	130			
Surr: Toluene-d8	99		100.0		98.6	70	130			

Sample ID: **2106c55-009a msd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-35** Batch ID: **R79445** RunNo: **79445**
Prep Date: Analysis Date: **6/30/2021** SeqNo: **2793620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5400	10	200.0	5241	71.4	70	130	4.86	20	E
Toluene	360	10	200.0	168.9	94.2	70	130	1.45	20	
Chlorobenzene	190	10	200.0	0	96.5	70	130	1.84	20	
1,1-Dichloroethene	190	10	200.0	0	93.1	70	130	6.68	20	
Trichloroethene (TCE)	190	10	200.0	0	95.7	70	130	2.49	20	
Surr: 1,2-Dichloroethane-d4	100		100.0		104	70	130	0	0	
Surr: 4-Bromofluorobenzene	100		100.0		105	70	130	0	0	
Surr: Dibromofluoromethane	99		100.0		98.8	70	130	0	0	
Surr: Toluene-d8	98		100.0		97.7	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R79445**	RunNo: **79445**
Prep Date:	Analysis Date: **6/30/2021**	SeqNo: **2793632** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R79445**	RunNo: **79445**
Prep Date:	Analysis Date: **6/30/2021**	SeqNo: **2793632** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	10		10.00		99.6	70	130			
Surr: Toluene-d8	9.9		10.00		98.7	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R79505**	RunNo: **79505**
Prep Date:	Analysis Date: **6/30/2021**	SeqNo: **2795257** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R79505** RunNo: **79505**
Prep Date: Analysis Date: **6/30/2021** SeqNo: **2795257** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R79505** RunNo: **79505**
Prep Date: Analysis Date: **6/30/2021** SeqNo: **2795278** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.8		10.00		98.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB-60957**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **60957**	RunNo: **79629**
Prep Date: **6/28/2021**	Analysis Date: **7/7/2021**	SeqNo: **2800685** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Azobenzene	ND	5.0								
Benzoic acid	ND	5.0								
Benzyl alcohol	ND	5.0								
Bis(2-chloroethoxy)methane	ND	5.0								
Bis(2-chloroethyl)ether	ND	5.0								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	5.0	10								J
4-Bromophenyl phenyl ether	ND	5.0								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
2-Chloronaphthalene	ND	5.0								
2-Chlorophenol	ND	5.0								
4-Chlorophenyl phenyl ether	ND	5.0								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
Dibenzofuran	ND	5.0								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
3,3´-Dichlorobenzidine	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	5.0								
4,6-Dinitro-2-methylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	5.0								
Hexachlorobenzene	ND	5.0								
Hexachlorobutadiene	ND	5.0								
Hexachlorocyclopentadiene	ND	5.0								
Hexachloroethane	ND	5.0								
Isophorone	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
N-Nitrosodi-n-propylamine	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB-60957** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **60957** RunNo: **79629**
Prep Date: **6/28/2021** Analysis Date: **7/7/2021** SeqNo: **2800685** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	5.0								
2-Nitroaniline	ND	5.0								
3-Nitroaniline	ND	5.0								
4-Nitroaniline	ND	5.0								
Nitrobenzene	ND	5.0								
2-Nitrophenol	ND	5.0								
4-Nitrophenol	ND	5.0								
Pentachlorophenol	ND	20								
Phenol	ND	5.0								
Pyridine	ND	5.0								
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	120		200.0		61.2	15	88.8			
Surr: Phenol-d5	91		200.0		45.3	15	71.9			
Surr: 2,4,6-Tribromophenol	130		200.0		64.3	15	97.4			
Surr: Nitrobenzene-d5	70		100.0		69.9	15	117			
Surr: 2-Fluorobiphenyl	66		100.0		66.1	15	100			
Surr: 4-Terphenyl-d14	91		100.0		91.1	15	120			

Sample ID: **LCS-60957** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **60957** RunNo: **79629**
Prep Date: **6/28/2021** Analysis Date: **7/7/2021** SeqNo: **2800686** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	150	5.0	200.0	0	72.6	28.3	103			
2-Chlorophenol	140	5.0	200.0	0	70.6	29.3	105			
1,4-Dichlorobenzene	62	5.0	100.0	0	61.9	15	87.6			
2,4-Dinitrotoluene	57	5.0	100.0	0	56.8	23.6	90.9			
N-Nitrosodi-n-propylamine	72	5.0	100.0	0	71.7	23.1	94.6			
4-Nitrophenol	81	5.0	200.0	0	40.5	15	77			
Pentachlorophenol	120	20	200.0	0	62.4	21	111			
Phenol	83	5.0	200.0	0	41.7	16.8	70.5			
1,2,4-Trichlorobenzene	63	5.0	100.0	0	62.7	15	88.2			
Surr: 2-Fluorophenol	110		200.0		53.6	15	88.8			
Surr: Phenol-d5	84		200.0		42.2	15	71.9			
Surr: 2,4,6-Tribromophenol	140		200.0		71.9	15	97.4			
Surr: Nitrobenzene-d5	68		100.0		68.3	15	117			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LCS-60957** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **60957** RunNo: **79629**
Prep Date: **6/28/2021** Analysis Date: **7/7/2021** SeqNo: **2800686** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	67		100.0		66.6	15	100			
Surr: 4-Terphenyl-d14	93		100.0		92.6	15	120			

Sample ID: **LCSD-60957** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **60957** RunNo: **79629**
Prep Date: **6/28/2021** Analysis Date: **7/7/2021** SeqNo: **2800687** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	140	5.0	200.0	0	71.5	28.3	103	1.57	44.7	
2-Chlorophenol	140	5.0	200.0	0	68.3	29.3	105	3.34	35.6	
1,4-Dichlorobenzene	60	5.0	100.0	0	59.7	15	87.6	3.71	30.4	
2,4-Dinitrotoluene	60	5.0	100.0	0	60.1	23.6	90.9	5.66	53.1	
N-Nitrosodi-n-propylamine	70	5.0	100.0	0	69.7	23.1	94.6	2.84	31.1	
4-Nitrophenol	85	5.0	200.0	0	42.7	15	77	5.39	52.4	
Pentachlorophenol	130	20	200.0	0	66.9	21	111	6.94	71.6	
Phenol	83	5.0	200.0	0	41.6	16.8	70.5	0.268	37.2	
1,2,4-Trichlorobenzene	58	5.0	100.0	0	58.0	15	88.2	7.85	31.8	
Surr: 2-Fluorophenol	100		200.0		50.5	15	88.8	0	0	
Surr: Phenol-d5	83		200.0		41.5	15	71.9	0	0	
Surr: 2,4,6-Tribromophenol	150		200.0		76.8	15	97.4	0	0	
Surr: Nitrobenzene-d5	65		100.0		64.8	15	117	0	0	
Surr: 2-Fluorobiphenyl	63		100.0		62.6	15	100	0	0	
Surr: 4-Terphenyl-d14	90		100.0		89.6	15	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **lcs-60905** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **60905** RunNo: **79626**
Prep Date: **6/24/2021** Analysis Date: **7/7/2021** SeqNo: **2800589** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.94	0.10	2.000	0	47.0	15	79.8			
Naphthalene	1.4	0.10	2.000	0	68.0	26.5	90.9			
1-Methylnaphthalene	1.4	0.10	2.000	0	68.0	27.9	88.2			
2-Methylnaphthalene	1.3	0.10	2.000	0	67.0	29.2	87.5			
Acenaphthylene	1.6	0.10	2.000	0	79.0	30	92.9			
Acenaphthene	1.6	0.10	2.000	0	79.0	25.6	93.9			
Fluorene	1.7	0.10	2.000	0	83.0	27.4	95.1			
Phenanthrene	1.8	0.10	2.000	0	91.0	25.1	104			
Anthracene	1.7	0.10	2.000	0	86.0	30.1	100			
Fluoranthene	2.0	0.20	2.000	0	98.0	41.6	126			
Pyrene	1.9	0.20	2.000	0	96.0	34.5	112			
Benz(a)anthracene	2.1	0.10	2.000	0	105	43.9	132			
Chrysene	2.0	0.10	2.000	0	102	39.8	118			
Benzo(b)fluoranthene	2.3	0.10	2.000	0	117	37.2	134			
Benzo(k)fluoranthene	2.1	0.10	2.000	0	103	43.8	122			
Benzo(a)pyrene	2.1	0.070	2.000	0	105	36.6	122			
Dibenz(a,h)anthracene	2.3	0.10	2.000	0	116	35.5	129			
Benzo(g,h,i)perylene	2.2	0.10	2.000	0	112	39.4	120			
Indeno(1,2,3-cd)pyrene	2.6	0.30	2.000	0	132	24.9	150			
Surr: Nitrobenzene-d5	4.1		5.000		81.2	26.3	112			
Surr: 2,4,6-Tribromophenol	6.4		10.00		63.8	27.7	118			
Surr: 2-Fluorobiphenyl	2.9		5.000		57.2	21.1	110			
Surr: 4-Terphenyl-d14	6.3		5.000		127	17.6	167			

Sample ID: **lcsd-60905** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **60905** RunNo: **79626**
Prep Date: **6/24/2021** Analysis Date: **7/7/2021** SeqNo: **2800590** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.82	0.10	2.000	0	41.0	15	79.8	13.6	34.2	
Naphthalene	1.2	0.10	2.000	0	61.0	26.5	90.9	10.9	37.6	
1-Methylnaphthalene	1.2	0.10	2.000	0	62.0	27.9	88.2	9.23	33.1	
2-Methylnaphthalene	1.2	0.10	2.000	0	61.0	29.2	87.5	9.38	35.4	
Acenaphthylene	1.4	0.10	2.000	0	71.0	30	92.9	10.7	31.7	
Acenaphthene	1.4	0.10	2.000	0	71.0	25.6	93.9	10.7	36.3	
Fluorene	1.5	0.10	2.000	0	74.0	27.4	95.1	11.5	32.2	
Phenanthrene	1.6	0.10	2.000	0	80.0	25.1	104	12.9	32.9	
Anthracene	1.5	0.10	2.000	0	76.0	30.1	100	12.3	31.5	
Fluoranthene	1.8	0.20	2.000	0	88.0	41.6	126	10.8	26.5	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **lcsd-60905** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **60905** RunNo: **79626**
Prep Date: **6/24/2021** Analysis Date: **7/7/2021** SeqNo: **2800590** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Pyrene	1.7	0.20	2.000	0	87.0	34.5	112	9.84	23.3	
Benz(a)anthracene	1.8	0.10	2.000	0	92.0	43.9	132	13.2	29.5	
Chrysene	1.8	0.10	2.000	0	89.0	39.8	118	13.6	22.3	
Benzo(b)fluoranthene	2.1	0.10	2.000	0	107	37.2	134	8.93	25.2	
Benzo(k)fluoranthene	1.9	0.10	2.000	0	93.0	43.8	122	10.2	23.1	
Benzo(a)pyrene	1.9	0.070	2.000	0	93.0	36.6	122	12.1	22.4	
Dibenz(a,h)anthracene	2.0	0.10	2.000	0	101	35.5	129	13.8	23.7	
Benzo(g,h,i)perylene	1.9	0.10	2.000	0	96.0	39.4	120	15.4	22.9	
Indeno(1,2,3-cd)pyrene	2.4	0.30	2.000	0	120	24.9	150	9.52	26.6	
Surr: Nitrobenzene-d5	3.5		5.000		70.8	26.3	112	0	0	
Surr: 2,4,6-Tribromophenol	5.6		10.00		56.0	27.7	118	0	0	
Surr: 2-Fluorobiphenyl	2.3		5.000		46.0	21.1	110	0	0	
Surr: 4-Terphenyl-d14	5.7		5.000		113	17.6	167	0	0	

Sample ID: **mb-61176** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **61176** RunNo: **79772**
Prep Date: **7/8/2021** Analysis Date: **7/13/2021** SeqNo: **2806289** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	1.8		4.000		46.0	26.3	112			
Surr: 2,4,6-Tribromophenol	3.1		8.000		38.8	27.7	118			
Surr: 2-Fluorobiphenyl	1.7		4.000		43.0	21.1	110			
Surr: 4-Terphenyl-d14	5.1		4.000		127	17.6	167			

Sample ID: **lcs-61176** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **61176** RunNo: **79772**
Prep Date: **7/8/2021** Analysis Date: **7/13/2021** SeqNo: **2806290** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	4.4		5.000		88.0	26.3	112			
Surr: 2,4,6-Tribromophenol	7.6		10.00		76.2	27.7	118			
Surr: 2-Fluorobiphenyl	3.7		5.000		74.4	21.1	110			
Surr: 4-Terphenyl-d14	6.7		5.000		134	17.6	167			

Sample ID: **lcsd-61176** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **61176** RunNo: **79772**
Prep Date: **7/8/2021** Analysis Date: **7/13/2021** SeqNo: **2806292** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.8		5.000		76.4	26.3	112	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **lcsd-61176**	SampType: **LCSD**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSS02**	Batch ID: **61176**	RunNo: **79772**							
Prep Date: **7/8/2021**	Analysis Date: **7/13/2021**	SeqNo: **2806292**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	6.9		10.00		69.0	27.7	118	0	0	
Surr: 2-Fluorobiphenyl	2.9		5.000		58.0	21.1	110	0	0	
Surr: 4-Terphenyl-d14	6.6		5.000		131	17.6	167	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**

26-Jul-21

Client: Marathon

Project: 2021 GW Sampling 2nd Quarter

Sample ID: **2.5ug gro lcs2**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **GW79410**	RunNo: **79410**
Prep Date:	Analysis Date: **6/25/2021**	SeqNo: **2791329** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.43	0.050	0.5000	0	85.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **GW79410**	RunNo: **79410**
Prep Date:	Analysis Date: **6/25/2021**	SeqNo: **2791393** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G79445**	RunNo: **79445**
Prep Date:	Analysis Date: **6/29/2021**	SeqNo: **2793768** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	96.0	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			

Sample ID: **2106C55-009A MS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-35**	Batch ID: **G79445**	RunNo: **79445**
Prep Date:	Analysis Date: **6/30/2021**	SeqNo: **2793771** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	0.50	5.000	14.34	100	70	130			
Surr: 4-Bromofluorobenzene	110		100.0		109	70	130			

Sample ID: **2106C55-009A MSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-35**	Batch ID: **G79445**	RunNo: **79445**
Prep Date:	Analysis Date: **6/30/2021**	SeqNo: **2793772** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	0.50	5.000	14.34	79.6	70	130	5.50	20	
Surr: 4-Bromofluorobenzene	100		100.0		103	70	130	0	0	

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G79445**	RunNo: **79445**
Prep Date:	Analysis Date: **6/30/2021**	SeqNo: **2793783** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106C55**
26-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G79445**	RunNo: **79445**
Prep Date:	Analysis Date: **6/30/2021**	SeqNo: **2793783** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2106C55** RcptNo: **1**

Received By: **Desiree Dominguez** **6/23/2021 4:50:00 PM** DD

Completed By: **Desiree Dominguez** **6/23/2021 4:55:23 PM** DD

Reviewed By: JN 6/24/21

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐ SPA 6.24.21
8. Was preservative added to bottles? Yes ☒ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 33 (<2 or >12 unless noted)
Adjusted? Yes
Checked by: SPA 6.24.21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions: (1) Sample 10 (FB) Not Present.

16. Additional remarks: (2) Extra unpres 125ml Turned into 009G; added 0.5ml HNO_3 For ph<2, metals Analysis.
(3) Added 0.5ml HNO_3 to 003E For ph<2, metals Analysis.
(4) Pour From (12B) For 012E (10F2), unpres.
SPA 6.24.21

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	10.1	Good				
2	12.2	Good				
3	6.7	Good				
4	8.8	Good				

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2106C55** RcptNo: 1

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
5	8.0	Good				

Released to Imaging: 11/23/2022 10:23:25 AM

Received by OCD: 3/25/2022 3:35:30 PM

Chain of Custody Record

Client: Marathon Petroleum Company	☐ Standard ☐ Rush
Mailing Address: 92 Giant Crossing Rd. Jamestown, NM 87347	Project Name: 2nd 2021 GW Sampling - ~~1st~~ Quarter
Phone #: 808-640-1823	Project #: 697-080-001
email or Fax#: bmcloughlin@trihydro.com	Project Manager: Brian McLoughlin
QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)	Sampler:
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	On Ice: ☒ Yes ☐ No
☒ EDD (Type)	# of Coolers: X 5 DAD 6.23.21
	Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2106C55
6/23	9:15	water	MKTF-10	14		-001
6/23	9:30	water	NAPIS-1	14		-002
6/23	10:20	water	OW-58A	14	1	-003
6/23	10:40	water	OW-58	14		-004
6/23	10:50	water	OW-57	14		-005
6/23	11:10	water	MKTF-38	14		-006
6/23	11:30	water	MKTF-16	16		-007
6/23	11:45	water	MKTF-36	16		-008
6/23	12:00	water	MKTF-35	16		-009
6/23	12:00	water	FB 6/23/2021	2		-010
6/23	12:00	water	EB 6/23/2021	16		-011
6/23	—	water	DUP 6/23/2021	16		-012

Analysis Request

	8260 (BTEX/MTBE)	TPH GRO	TPH DRO/MRO	SVOC includes 1,4 Dioxane on reques	1,4 Dioxane only	WQCC metals	C/A	NO2/NO3 combined	Nitrite	8011 EDB	~~BOD~~ BTEX/MTBE	COD	Cyanide	TDS/TSS	Gen Chem	PFAS
-001	X	X	X	X		X	X									
-002		X	X	X		X	X				X					
-003	X	X	X					X	X	X						
-004	X	X	X					X	X	X						
-005	X	X	X					X	X	X						
-006	X	X	X	X	X	X	X									
-007	X	X	X	X		X	X			X						
-008	X	X	X	X	X	X	X			X						
-009	X	X	X	X		X	X			X						
-010	X															
-011	X	X	X	X		X	X									
-012	X	X	X	X		X	X			X						

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/23	14:00			Courier	6.23.21	16:50
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:
① 10.2 - 0.1 = 10.1°C
② 12.3 - 0.1 = 12.2°C
③ 6.8 - 0.1 = 6.7°C
④ 8.9 - 0.1 = 8.8°C
⑤ 8.1 - 0.1 = 8.0°C

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

November 03, 2021

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL:
FAX

RE: 2021 GW Sampling 3rd Quarter OrderNo.: 2109B85

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 11 sample(s) on 9/21/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
Toluene	ND	0.20	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
Acetone	3.9	2.5	10	J	µg/L	1	9/24/2021 2:10:28 PM	R81591
Bromomethane	ND	0.85	3.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
2-Butanone	ND	2.0	10		µg/L	1	9/24/2021 2:10:28 PM	R81591
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
Chloroethane	ND	0.38	2.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
Chloroform	ND	0.13	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
Chloromethane	ND	0.41	3.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
2-Hexanone	ND	1.8	10		µg/L	1	9/24/2021 2:10:28 PM	R81591
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/24/2021 2:10:28 PM	R81591
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
Styrene	ND	0.14	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/24/2021 2:10:28 PM	R81591
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/24/2021 2:10:28 PM	R81591
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	9/24/2021 2:10:28 PM	R81591
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/24/2021 2:10:28 PM	R81591
Surr: Dibromofluoromethane	99.8	0	70-130		%Rec	1	9/24/2021 2:10:28 PM	R81591

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: Toluene-d8	112	0	70-130		%Rec	1	9/24/2021 2:10:28 PM	R81591
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/24/2021 2:10:28 PM	G81591
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	9/24/2021 2:10:28 PM	G81591

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-001B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	9/29/2021 1:54:38 PM	62893

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.026	0.016	0.064	J	mg/L	1	9/28/2021 6:08:46 AM	62819
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/28/2021 6:08:46 AM	62819
Surr: DNOP	93.2	0	15-142		%Rec	1	9/28/2021 6:08:46 AM	62819

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/29/2021 5:16:41 PM	62838
Benzoic acid	ND	1.1	20		µg/L	1	9/29/2021 5:16:41 PM	62838
Benzyl alcohol	ND	0.68	5.0		µg/L	1	9/29/2021 5:16:41 PM	62838
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/29/2021 5:16:41 PM	62838
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/29/2021 5:16:41 PM	62838
Carbazole	ND	0.56	5.0		µg/L	1	9/29/2021 5:16:41 PM	62838
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/29/2021 5:16:41 PM	62838
Dibenzofuran	ND	0.38	5.0		µg/L	1	9/29/2021 5:16:41 PM	62838
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/29/2021 5:16:41 PM	62838
Diethyl phthalate	ND	3.9	10		µg/L	1	9/29/2021 5:16:41 PM	62838
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/29/2021 5:16:41 PM	62838
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	9/29/2021 5:16:41 PM	62838
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/29/2021 5:16:41 PM	62838
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/29/2021 5:16:41 PM	62838
Pentachlorophenol	ND	0.59	20		µg/L	1	9/29/2021 5:16:41 PM	62838
Phenol	ND	0.33	5.0		µg/L	1	9/29/2021 5:16:41 PM	62838
Pyridine	ND	0.93	5.0		µg/L	1	9/29/2021 5:16:41 PM	62838
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/29/2021 5:16:41 PM	62838
Surr: 2-Fluorophenol	44.0	0	15-87		%Rec	1	9/29/2021 5:16:41 PM	62838
Surr: Phenol-d5	32.5	0	15-67.5		%Rec	1	9/29/2021 5:16:41 PM	62838
Surr: 2,4,6-Tribromophenol	52.6	0	15-122		%Rec	1	9/29/2021 5:16:41 PM	62838
Surr: Nitrobenzene-d5	52.5	0	15-103		%Rec	1	9/29/2021 5:16:41 PM	62838
Surr: 2-Fluorobiphenyl	53.7	0	15-103		%Rec	1	9/29/2021 5:16:41 PM	62838
Surr: 4-Terphenyl-d14	68.1	0	45-137		%Rec	1	9/29/2021 5:16:41 PM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	9/30/2021 3:10:00 PM	62813
Naphthalene	ND	0.034	0.10		µg/L	1	9/30/2021 3:10:00 PM	62813
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	9/30/2021 3:10:00 PM	62813
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	9/30/2021 3:10:00 PM	62813
Acenaphthene	ND	0.031	0.10		µg/L	1	9/30/2021 3:10:00 PM	62813
Fluorene	ND	0.031	0.10		µg/L	1	9/30/2021 3:10:00 PM	62813
Phenanthrene	ND	0.057	0.10		µg/L	1	9/30/2021 3:10:00 PM	62813
Anthracene	ND	0.034	0.10		µg/L	1	9/30/2021 3:10:00 PM	62813
Pyrene	ND	0.16	0.20		µg/L	1	9/30/2021 3:10:00 PM	62813
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/30/2021 3:10:00 PM	62813
Chrysene	ND	0.024	0.10		µg/L	1	9/30/2021 3:10:00 PM	62813
Surr: 2-Fluorobiphenyl	53.5	0	15-84.5		%Rec	1	9/30/2021 3:10:00 PM	62813

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	ND	0.040	0.10		mg/L	1	9/22/2021 3:26:23 PM	R81507
Chloride	ND	0.25	0.50		mg/L	1	9/22/2021 3:26:23 PM	R81507
Nitrogen, Nitrite (As N)	ND	0.0053	0.10		mg/L	1	9/22/2021 3:26:23 PM	R81507
Nitrogen, Nitrate (As N)	0.050	0.010	0.10	J	mg/L	1	9/22/2021 3:26:23 PM	R81507
Sulfate	ND	0.25	0.50		mg/L	1	9/22/2021 3:26:23 PM	R81507

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-001F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	9/24/2021 2:06:19 PM	62794
Cadmium	ND	0.0015	0.0020		mg/L	1	9/24/2021 2:06:19 PM	62794
Chromium	ND	0.0021	0.0060		mg/L	1	9/24/2021 2:06:19 PM	62794
Iron	ND	0.013	0.050		mg/L	1	9/24/2021 2:06:19 PM	62794
Manganese	ND	0.00081	0.0020		mg/L	1	9/24/2021 2:06:19 PM	62794
Silver	ND	0.0013	0.0050		mg/L	1	9/24/2021 2:06:19 PM	62794
Zinc	ND	0.0064	0.010		mg/L	1	9/24/2021 2:06:19 PM	62794
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	ND	0.00013	0.0010		mg/L	1	9/30/2021 4:12:32 PM	62794
Copper	ND	0.00040	0.0010		mg/L	1	9/30/2021 4:12:32 PM	62794
Lead	ND	0.000061	0.00050		mg/L	1	9/30/2021 4:12:32 PM	62794
Selenium	ND	0.00037	0.0010		mg/L	1	9/30/2021 4:12:32 PM	62794
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 11:27:22 AM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-001G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	9/29/2021 11:52:02 AM	B81654
Cadmium	ND	0.0012	0.0020		mg/L	1	9/29/2021 11:52:02 AM	B81654
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2021 11:52:02 AM	B81654
Iron	ND	0.010	0.020		mg/L	1	9/29/2021 11:52:02 AM	B81654
Manganese	ND	0.00058	0.0020		mg/L	1	9/29/2021 11:52:02 AM	B81654
Silver	ND	0.0013	0.0050		mg/L	1	9/29/2021 11:52:02 AM	B81654
Zinc	0.0080	0.0060	0.010	J	mg/L	1	9/29/2021 11:52:02 AM	B81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	ND	0.00012	0.0010		mg/L	1	9/29/2021 4:17:10 PM	C81686
Copper	ND	0.00037	0.0010		mg/L	1	9/29/2021 4:17:10 PM	C81686
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2021 4:17:10 PM	C81686
Selenium	ND	0.00034	0.0010		mg/L	1	9/29/2021 4:17:10 PM	C81686
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 11:29:47 AM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
Toluene	ND	0.20	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
Methyl tert-butyl ether (MTBE)	0.94	0.39	1.0	J	µg/L	1	9/24/2021 2:39:05 PM	R81591
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
1,2-Dichloroethane (EDC)	0.33	0.25	1.0	J	µg/L	1	9/24/2021 2:39:05 PM	R81591
Acetone	ND	2.5	10		µg/L	1	9/24/2021 2:39:05 PM	R81591
Bromomethane	ND	0.85	3.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
2-Butanone	ND	2.0	10		µg/L	1	9/24/2021 2:39:05 PM	R81591
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
Chloroethane	ND	0.38	2.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
Chloroform	ND	0.13	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
Chloromethane	ND	0.41	3.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
1,1-Dichloroethane	0.78	0.27	1.0	J	µg/L	1	9/24/2021 2:39:05 PM	R81591
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
2-Hexanone	ND	1.8	10		µg/L	1	9/24/2021 2:39:05 PM	R81591
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/24/2021 2:39:05 PM	R81591
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
Styrene	ND	0.14	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/24/2021 2:39:05 PM	R81591
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/24/2021 2:39:05 PM	R81591
Surr: 1,2-Dichloroethane-d4	115	0	70-130		%Rec	1	9/24/2021 2:39:05 PM	R81591
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/24/2021 2:39:05 PM	R81591
Surr: Dibromofluoromethane	105	0	70-130		%Rec	1	9/24/2021 2:39:05 PM	R81591

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: Toluene-d8	108	0	70-130		%Rec	1	9/24/2021 2:39:05 PM	R81591
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/24/2021 2:39:05 PM	G81591
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	9/24/2021 2:39:05 PM	G81591

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-002B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0092		µg/L	1	9/29/2021 2:09:43 PM	62893

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.040	0.016	0.064	J	mg/L	1	9/28/2021 6:32:29 AM	62819
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/28/2021 6:32:29 AM	62819
Surr: DNOP	91.9	0	15-142		%Rec	1	9/28/2021 6:32:29 AM	62819

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/29/2021 5:58:11 PM	62838
Benzoic acid	ND	1.1	20		µg/L	1	9/29/2021 5:58:11 PM	62838
Benzyl alcohol	ND	0.68	5.0		µg/L	1	9/29/2021 5:58:11 PM	62838
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/29/2021 5:58:11 PM	62838
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/29/2021 5:58:11 PM	62838
Carbazole	ND	0.56	5.0		µg/L	1	9/29/2021 5:58:11 PM	62838
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/29/2021 5:58:11 PM	62838
Dibenzofuran	ND	0.38	5.0		µg/L	1	9/29/2021 5:58:11 PM	62838
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/29/2021 5:58:11 PM	62838
Diethyl phthalate	ND	3.9	10		µg/L	1	9/29/2021 5:58:11 PM	62838
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/29/2021 5:58:11 PM	62838
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	9/29/2021 5:58:11 PM	62838
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/29/2021 5:58:11 PM	62838
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/29/2021 5:58:11 PM	62838
Pentachlorophenol	ND	0.59	20		µg/L	1	9/29/2021 5:58:11 PM	62838
Phenol	ND	0.33	5.0		µg/L	1	9/29/2021 5:58:11 PM	62838
Pyridine	ND	0.93	5.0		µg/L	1	9/29/2021 5:58:11 PM	62838
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/29/2021 5:58:11 PM	62838
Surr: 2-Fluorophenol	52.3	0	15-87		%Rec	1	9/29/2021 5:58:11 PM	62838
Surr: Phenol-d5	41.3	0	15-67.5		%Rec	1	9/29/2021 5:58:11 PM	62838
Surr: 2,4,6-Tribromophenol	64.3	0	15-122		%Rec	1	9/29/2021 5:58:11 PM	62838
Surr: Nitrobenzene-d5	61.5	0	15-103		%Rec	1	9/29/2021 5:58:11 PM	62838
Surr: 2-Fluorobiphenyl	63.8	0	15-103		%Rec	1	9/29/2021 5:58:11 PM	62838
Surr: 4-Terphenyl-d14	92.3	0	45-137		%Rec	1	9/29/2021 5:58:11 PM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	6.7	0.048	1.0		µg/L	1	9/30/2021 3:53:00 PM	62813
Naphthalene	ND	0.034	0.10		µg/L	1	9/30/2021 3:53:00 PM	62813
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	9/30/2021 3:53:00 PM	62813
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	9/30/2021 3:53:00 PM	62813
Acenaphthene	ND	0.031	0.10		µg/L	1	9/30/2021 3:53:00 PM	62813
Fluorene	ND	0.031	0.10		µg/L	1	9/30/2021 3:53:00 PM	62813
Phenanthrene	ND	0.057	0.10		µg/L	1	9/30/2021 3:53:00 PM	62813
Anthracene	ND	0.034	0.10		µg/L	1	9/30/2021 3:53:00 PM	62813
Pyrene	ND	0.16	0.20		µg/L	1	9/30/2021 3:53:00 PM	62813
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/30/2021 3:53:00 PM	62813
Chrysene	ND	0.024	0.10		µg/L	1	9/30/2021 3:53:00 PM	62813
Surr: 2-Fluorobiphenyl	59.5	0	15-84.5		%Rec	1	9/30/2021 3:53:00 PM	62813

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-002E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	ND	0.20	0.50		mg/L	5	9/22/2021 4:43:16 PM	R81507
Chloride	3500	120	250	*	mg/L	500	9/27/2021 2:56:09 PM	R81599
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	9/22/2021 4:43:16 PM	R81507
Nitrogen, Nitrate (As N)	0.14	0.050	0.50	J	mg/L	5	9/22/2021 4:43:16 PM	R81507
Sulfate	550	5.0	10	*	mg/L	20	9/22/2021 4:56:09 PM	R81507

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-002F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.074	0.0016	0.0030		mg/L	1	9/24/2021 2:15:39 PM	62794
Cadmium	ND	0.0015	0.0020		mg/L	1	9/24/2021 2:15:39 PM	62794
Chromium	ND	0.0021	0.0060		mg/L	1	9/24/2021 2:15:39 PM	62794
Iron	0.65	0.064	0.25	*	mg/L	5	9/28/2021 11:24:38 AM	62794
Manganese	0.016	0.00081	0.0020		mg/L	1	9/24/2021 2:15:39 PM	62794
Silver	0.0013	0.0013	0.0050	J	mg/L	1	9/24/2021 2:15:39 PM	62794
Zinc	0.0099	0.0064	0.010	J	mg/L	1	9/24/2021 2:15:39 PM	62794
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0011	0.00063	0.0050	J	mg/L	5	9/30/2021 5:09:21 PM	62794
Copper	0.0011	0.00040	0.0010		mg/L	1	9/30/2021 4:14:58 PM	62794
Lead	0.00081	0.00031	0.0025	J	mg/L	5	9/30/2021 5:09:21 PM	62794
Selenium	0.0024	0.0019	0.0050	J	mg/L	5	9/30/2021 5:09:21 PM	62794
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 11:32:12 AM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 8:15:00 AM
Lab ID: 2109B85-002G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.058	0.0011	0.0020		mg/L	1	9/29/2021 12:02:02 PM	B81654
Cadmium	ND	0.0012	0.0020		mg/L	1	9/29/2021 12:02:02 PM	B81654
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2021 12:02:02 PM	B81654
Iron	ND	0.010	0.020		mg/L	1	9/29/2021 12:02:02 PM	B81654
Manganese	0.0013	0.00058	0.0020	J	mg/L	1	9/29/2021 12:02:02 PM	B81654
Silver	0.0015	0.0013	0.0050	J	mg/L	1	9/29/2021 12:02:02 PM	B81654
Zinc	0.0072	0.0060	0.010	J	mg/L	1	9/29/2021 12:02:02 PM	B81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00072	0.00012	0.0010	J	mg/L	1	9/29/2021 4:22:29 PM	C81686
Copper	0.00069	0.00037	0.0010	J	mg/L	1	9/29/2021 4:22:29 PM	C81686
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2021 4:22:29 PM	C81686
Selenium	0.00054	0.00034	0.0010	J	mg/L	1	9/29/2021 4:22:29 PM	C81686
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 11:34:39 AM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:15:00 AM
Lab ID: 2109B85-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	760	2.3	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
Toluene	ND	2.0	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
Ethylbenzene	ND	2.1	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
Methyl tert-butyl ether (MTBE)	660	3.9	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
1,2,4-Trimethylbenzene	ND	1.2	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
1,2-Dichloroethane (EDC)	13	2.5	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
Acetone	ND	25	100		µg/L	10	9/24/2021 3:07:46 PM	R81591
Bromomethane	ND	8.5	30		µg/L	10	9/24/2021 3:07:46 PM	R81591
2-Butanone	ND	20	100		µg/L	10	9/24/2021 3:07:46 PM	R81591
Chlorobenzene	ND	1.6	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
Chloroethane	ND	3.8	20		µg/L	10	9/24/2021 3:07:46 PM	R81591
Chloroform	ND	1.3	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
Chloromethane	23	4.1	30	J	µg/L	10	9/24/2021 3:07:46 PM	R81591
cis-1,2-DCE	21	3.9	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
1,1-Dichloroethane	110	2.7	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
1,1-Dichloroethene	59	2.0	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
1,2-Dichloropropane	ND	2.0	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
2-Hexanone	ND	18	100		µg/L	10	9/24/2021 3:07:46 PM	R81591
Isopropylbenzene	4.4	1.8	10	J	µg/L	10	9/24/2021 3:07:46 PM	R81591
4-Isopropyltoluene	ND	2.0	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
4-Methyl-2-pentanone	ND	8.8	100		µg/L	10	9/24/2021 3:07:46 PM	R81591
Methylene Chloride	6.5	5.0	30	J	µg/L	10	9/24/2021 3:07:46 PM	R81591
n-Butylbenzene	ND	2.5	30		µg/L	10	9/24/2021 3:07:46 PM	R81591
n-Propylbenzene	ND	1.8	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
sec-Butylbenzene	ND	1.4	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
Styrene	ND	1.4	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
tert-Butylbenzene	ND	2.4	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
1,1,2-Trichloroethane	ND	2.0	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
Trichloroethene (TCE)	11	2.0	10		µg/L	10	9/24/2021 3:07:46 PM	R81591
Vinyl chloride	8.9	3.2	10	J	µg/L	10	9/24/2021 3:07:46 PM	R81591
Xylenes, Total	ND	3.7	15		µg/L	10	9/24/2021 3:07:46 PM	R81591
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	10	9/24/2021 3:07:46 PM	R81591
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	10	9/24/2021 3:07:46 PM	R81591
Surr: Dibromofluoromethane	103	0	70-130		%Rec	10	9/24/2021 3:07:46 PM	R81591

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:15:00 AM
Lab ID: 2109B85-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: Toluene-d8	107	0	70-130		%Rec	10	9/24/2021 3:07:46 PM	R81591
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	2.9	0.12	0.50		mg/L	10	9/24/2021 3:07:46 PM	G81591
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	10	9/24/2021 3:07:46 PM	G81591

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:15:00 AM
Lab ID: 2109B85-003B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	9/29/2021 2:24:55 PM	62893

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:15:00 AM
Lab ID: 2109B85-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.63	0.016	0.064		mg/L	1	9/28/2021 6:56:09 AM	62819
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/28/2021 6:56:09 AM	62819
Surr: DNOP	94.0	0	15-142		%Rec	1	9/28/2021 6:56:09 AM	62819

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:15:00 AM
Lab ID: 2109B85-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/29/2021 6:39:36 PM	62838
Benzoic acid	ND	1.1	20		µg/L	1	9/29/2021 6:39:36 PM	62838
Benzyl alcohol	ND	0.68	5.0		µg/L	1	9/29/2021 6:39:36 PM	62838
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/29/2021 6:39:36 PM	62838
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/29/2021 6:39:36 PM	62838
Carbazole	3.7	0.56	5.0	J	µg/L	1	9/29/2021 6:39:36 PM	62838
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/29/2021 6:39:36 PM	62838
Dibenzofuran	ND	0.38	5.0		µg/L	1	9/29/2021 6:39:36 PM	62838
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/29/2021 6:39:36 PM	62838
Diethyl phthalate	ND	3.9	10		µg/L	1	9/29/2021 6:39:36 PM	62838
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/29/2021 6:39:36 PM	62838
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	9/29/2021 6:39:36 PM	62838
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/29/2021 6:39:36 PM	62838
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/29/2021 6:39:36 PM	62838
Pentachlorophenol	ND	0.59	20		µg/L	1	9/29/2021 6:39:36 PM	62838
Phenol	8.7	0.33	5.0		µg/L	1	9/29/2021 6:39:36 PM	62838
Pyridine	ND	0.93	5.0		µg/L	1	9/29/2021 6:39:36 PM	62838
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/29/2021 6:39:36 PM	62838
Surr: 2-Fluorophenol	43.3	0	15-87		%Rec	1	9/29/2021 6:39:36 PM	62838
Surr: Phenol-d5	32.8	0	15-67.5		%Rec	1	9/29/2021 6:39:36 PM	62838
Surr: 2,4,6-Tribromophenol	65.5	0	15-122		%Rec	1	9/29/2021 6:39:36 PM	62838
Surr: Nitrobenzene-d5	51.9	0	15-103		%Rec	1	9/29/2021 6:39:36 PM	62838
Surr: 2-Fluorobiphenyl	52.4	0	15-103		%Rec	1	9/29/2021 6:39:36 PM	62838
Surr: 4-Terphenyl-d14	85.3	0	45-137		%Rec	1	9/29/2021 6:39:36 PM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	52	0.48	10		µg/L	10	10/7/2021 10:46:00 AM	62813
Naphthalene	0.22	0.034	0.10		µg/L	1	9/30/2021 4:36:00 PM	62813
1-Methylnaphthalene	0.26	0.024	0.10		µg/L	1	9/30/2021 4:36:00 PM	62813
2-Methylnaphthalene	0.14	0.034	0.10		µg/L	1	9/30/2021 4:36:00 PM	62813
Acenaphthene	0.14	0.031	0.10		µg/L	1	9/30/2021 4:36:00 PM	62813
Fluorene	ND	0.031	0.10		µg/L	1	9/30/2021 4:36:00 PM	62813
Phenanthrene	ND	0.057	0.10		µg/L	1	9/30/2021 4:36:00 PM	62813
Anthracene	ND	0.034	0.10		µg/L	1	9/30/2021 4:36:00 PM	62813
Pyrene	ND	0.16	0.20		µg/L	1	9/30/2021 4:36:00 PM	62813
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/30/2021 4:36:00 PM	62813
Chrysene	ND	0.024	0.10		µg/L	1	9/30/2021 4:36:00 PM	62813
Surr: 2-Fluorobiphenyl	59.5	0	15-84.5		%Rec	1	9/30/2021 4:36:00 PM	62813

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:15:00 AM
Lab ID: 2109B85-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	ND	0.20	0.50		mg/L	5	9/22/2021 5:09:02 PM	R81507
Chloride	800	12	25	*	mg/L	50	9/27/2021 3:09:00 PM	R81599
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	9/22/2021 5:09:02 PM	R81507
Nitrogen, Nitrate (As N)	0.14	0.050	0.50	J	mg/L	5	9/22/2021 5:09:02 PM	R81507
Sulfate	67	1.2	2.5		mg/L	5	9/22/2021 5:09:02 PM	R81507

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:15:00 AM
Lab ID: 2109B85-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.32	0.0016	0.0030		mg/L	1	9/24/2021 2:38:51 PM	62794
Cadmium	ND	0.0015	0.0020		mg/L	1	9/24/2021 2:38:51 PM	62794
Chromium	ND	0.0021	0.0060		mg/L	1	9/24/2021 2:38:51 PM	62794
Iron	0.96	0.013	0.050	*	mg/L	1	9/24/2021 2:38:51 PM	62794
Manganese	3.0	0.0081	0.020	*	mg/L	10	9/24/2021 2:40:17 PM	62794
Silver	ND	0.0013	0.0050		mg/L	1	9/24/2021 2:38:51 PM	62794
Zinc	ND	0.0064	0.010		mg/L	1	9/24/2021 2:38:51 PM	62794
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0031	0.00013	0.0010		mg/L	1	9/30/2021 4:17:23 PM	62794
Copper	0.00094	0.00040	0.0010	J	mg/L	1	9/30/2021 4:17:23 PM	62794
Lead	0.00019	0.000061	0.00050	J	mg/L	1	9/30/2021 4:17:23 PM	62794
Selenium	0.00056	0.00037	0.0010	J	mg/L	1	9/30/2021 4:17:23 PM	62794
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 11:37:06 AM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:15:00 AM
Lab ID: 2109B85-003G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.28	0.0011	0.0020		mg/L	1	9/29/2021 12:05:25 PM	B81654
Cadmium	ND	0.0012	0.0020		mg/L	1	9/29/2021 12:05:25 PM	B81654
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2021 12:05:25 PM	B81654
Iron	0.027	0.010	0.020		mg/L	1	9/29/2021 12:05:25 PM	B81654
Manganese	2.7	0.0058	0.020	*	mg/L	10	9/29/2021 12:07:05 PM	B81654
Silver	ND	0.0013	0.0050		mg/L	1	9/29/2021 12:05:25 PM	B81654
Zinc	0.017	0.0060	0.010		mg/L	1	9/29/2021 12:05:25 PM	B81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0023	0.00012	0.0010		mg/L	1	9/29/2021 4:34:52 PM	C81686
Copper	0.00094	0.00037	0.0010	J	mg/L	1	9/29/2021 4:34:52 PM	C81686
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2021 4:34:52 PM	C81686
Selenium	ND	0.00034	0.0010		mg/L	1	9/29/2021 4:34:52 PM	C81686
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 11:39:32 AM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:40:00 AM
Lab ID: 2109B85-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	6400	23	100		µg/L	100	9/27/2021 4:25:10 PM	R81622
Toluene	27	2.0	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
Ethylbenzene	260	2.1	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
Methyl tert-butyl ether (MTBE)	100	3.9	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
1,2,4-Trimethylbenzene	ND	1.2	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
1,2-Dichloroethane (EDC)	4.6	2.5	5.0	J	µg/L	10	9/24/2021 3:36:25 PM	R81591
Acetone	28	25	100	J	µg/L	10	9/24/2021 3:36:25 PM	R81591
Bromomethane	ND	8.5	30		µg/L	10	9/24/2021 3:36:25 PM	R81591
2-Butanone	ND	20	100		µg/L	10	9/24/2021 3:36:25 PM	R81591
Chlorobenzene	ND	1.6	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
Chloroethane	ND	3.8	20		µg/L	10	9/24/2021 3:36:25 PM	R81591
Chloroform	ND	1.3	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
Chloromethane	ND	4.1	30		µg/L	10	9/24/2021 3:36:25 PM	R81591
cis-1,2-DCE	ND	3.9	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
1,1-Dichloroethane	30	2.7	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
1,1-Dichloroethene	5.1	2.0	10	J	µg/L	10	9/24/2021 3:36:25 PM	R81591
1,2-Dichloropropane	ND	2.0	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
2-Hexanone	ND	18	100		µg/L	10	9/24/2021 3:36:25 PM	R81591
Isopropylbenzene	19	1.8	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
4-Isopropyltoluene	ND	2.0	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
4-Methyl-2-pentanone	ND	8.8	100		µg/L	10	9/24/2021 3:36:25 PM	R81591
Methylene Chloride	8.1	5.0	30	J	µg/L	10	9/24/2021 3:36:25 PM	R81591
n-Butylbenzene	6.6	2.5	30	J	µg/L	10	9/24/2021 3:36:25 PM	R81591
n-Propylbenzene	33	1.8	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
sec-Butylbenzene	4.5	1.4	10	J	µg/L	10	9/24/2021 3:36:25 PM	R81591
Styrene	ND	1.4	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
tert-Butylbenzene	ND	2.4	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
1,1,2-Trichloroethane	ND	2.0	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
Vinyl chloride	30	3.2	10		µg/L	10	9/24/2021 3:36:25 PM	R81591
Xylenes, Total	7.6	3.7	15	J	µg/L	10	9/24/2021 3:36:25 PM	R81591
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	10	9/24/2021 3:36:25 PM	R81591
Surr: 4-Bromofluorobenzene	94.4	0	70-130		%Rec	10	9/24/2021 3:36:25 PM	R81591
Surr: Dibromofluoromethane	98.2	0	70-130		%Rec	10	9/24/2021 3:36:25 PM	R81591

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:40:00 AM
Lab ID: 2109B85-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: Toluene-d8	109	0	70-130		%Rec	10	9/24/2021 3:36:25 PM	R81591
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	18	0.12	0.50		mg/L	10	9/24/2021 3:36:25 PM	G81591
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	10	9/24/2021 3:36:25 PM	G81591

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:40:00 AM
Lab ID: 2109B85-004B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	9/29/2021 2:39:59 PM	62893

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:40:00 AM
Lab ID: 2109B85-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.65	0.016	0.064		mg/L	1	9/28/2021 7:19:47 AM	62819
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/28/2021 7:19:47 AM	62819
Surr: DNOP	102	0	15-142		%Rec	1	9/28/2021 7:19:47 AM	62819

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:40:00 AM
Lab ID: 2109B85-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/29/2021 7:21:16 PM	62838
Benzoic acid	ND	1.1	20		µg/L	1	9/29/2021 7:21:16 PM	62838
Benzyl alcohol	ND	0.68	5.0		µg/L	1	9/29/2021 7:21:16 PM	62838
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/29/2021 7:21:16 PM	62838
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/29/2021 7:21:16 PM	62838
Carbazole	3.8	0.56	5.0	J	µg/L	1	9/29/2021 7:21:16 PM	62838
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/29/2021 7:21:16 PM	62838
Dibenzofuran	ND	0.38	5.0		µg/L	1	9/29/2021 7:21:16 PM	62838
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/29/2021 7:21:16 PM	62838
Diethyl phthalate	ND	3.9	10		µg/L	1	9/29/2021 7:21:16 PM	62838
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/29/2021 7:21:16 PM	62838
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	9/29/2021 7:21:16 PM	62838
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/29/2021 7:21:16 PM	62838
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/29/2021 7:21:16 PM	62838
Pentachlorophenol	ND	0.59	20		µg/L	1	9/29/2021 7:21:16 PM	62838
Phenol	24	0.33	5.0		µg/L	1	9/29/2021 7:21:16 PM	62838
Pyridine	ND	0.93	5.0		µg/L	1	9/29/2021 7:21:16 PM	62838
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/29/2021 7:21:16 PM	62838
Surr: 2-Fluorophenol	45.3	0	15-87		%Rec	1	9/29/2021 7:21:16 PM	62838
Surr: Phenol-d5	33.4	0	15-67.5		%Rec	1	9/29/2021 7:21:16 PM	62838
Surr: 2,4,6-Tribromophenol	59.3	0	15-122		%Rec	1	9/29/2021 7:21:16 PM	62838
Surr: Nitrobenzene-d5	54.0	0	15-103		%Rec	1	9/29/2021 7:21:16 PM	62838
Surr: 2-Fluorobiphenyl	51.9	0	15-103		%Rec	1	9/29/2021 7:21:16 PM	62838
Surr: 4-Terphenyl-d14	74.0	0	45-137		%Rec	1	9/29/2021 7:21:16 PM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	15	0.048	1.0		µg/L	1	9/30/2021 5:19:00 PM	62813
Naphthalene	0.56	0.034	0.10		µg/L	1	9/30/2021 5:19:00 PM	62813
1-Methylnaphthalene	2.3	0.024	0.10		µg/L	1	9/30/2021 5:19:00 PM	62813
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	9/30/2021 5:19:00 PM	62813
Acenaphthene	0.30	0.031	0.10		µg/L	1	9/30/2021 5:19:00 PM	62813
Fluorene	ND	0.031	0.10		µg/L	1	9/30/2021 5:19:00 PM	62813
Phenanthrene	ND	0.057	0.10		µg/L	1	9/30/2021 5:19:00 PM	62813
Anthracene	ND	0.034	0.10		µg/L	1	9/30/2021 5:19:00 PM	62813
Pyrene	ND	0.16	0.20		µg/L	1	9/30/2021 5:19:00 PM	62813
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/30/2021 5:19:00 PM	62813
Chrysene	ND	0.024	0.10		µg/L	1	9/30/2021 5:19:00 PM	62813
Surr: 2-Fluorobiphenyl	53.0	0	15-84.5		%Rec	1	9/30/2021 5:19:00 PM	62813

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:40:00 AM
Lab ID: 2109B85-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	ND	0.20	0.50		mg/L	5	9/22/2021 5:34:48 PM	R81507
Chloride	1100	25	50	*	mg/L	100	9/27/2021 3:21:53 PM	R81599
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	9/22/2021 5:34:48 PM	R81507
Nitrogen, Nitrate (As N)	ND	0.050	0.50		mg/L	5	9/22/2021 5:34:48 PM	R81507
Sulfate	13	1.2	2.5		mg/L	5	9/22/2021 5:34:48 PM	R81507

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:40:00 AM
Lab ID: 2109B85-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.77	0.0016	0.0030		mg/L	1	9/24/2021 2:48:05 PM	62794
Cadmium	ND	0.0015	0.0020		mg/L	1	9/24/2021 2:48:05 PM	62794
Chromium	ND	0.0021	0.0060		mg/L	1	9/24/2021 2:48:05 PM	62794
Iron	0.67	0.013	0.050	*	mg/L	1	9/28/2021 11:31:10 AM	62794
Manganese	4.0	0.0081	0.020	*	mg/L	10	9/24/2021 2:49:33 PM	62794
Silver	ND	0.0013	0.0050		mg/L	1	9/24/2021 2:48:05 PM	62794
Zinc	0.0080	0.0064	0.010	J	mg/L	1	9/24/2021 2:48:05 PM	62794
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0029	0.00013	0.0010		mg/L	1	9/30/2021 4:24:39 PM	62794
Copper	0.00063	0.00040	0.0010	J	mg/L	1	9/30/2021 4:24:39 PM	62794
Lead	0.0022	0.000061	0.00050		mg/L	1	9/30/2021 4:24:39 PM	62794
Selenium	0.00082	0.00037	0.0010	J	mg/L	1	9/30/2021 4:24:39 PM	62794
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 11:42:01 AM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 9:40:00 AM
Lab ID: 2109B85-004G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.71	0.0011	0.0020		mg/L	1	9/29/2021 12:08:43 PM	B81654
Cadmium	ND	0.0012	0.0020		mg/L	1	9/29/2021 12:08:43 PM	B81654
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2021 12:08:43 PM	B81654
Iron	0.39	0.010	0.020	*	mg/L	1	9/29/2021 12:08:43 PM	B81654
Manganese	3.7	0.0058	0.020	*	mg/L	10	9/29/2021 12:10:26 PM	B81654
Silver	ND	0.0013	0.0050		mg/L	1	9/29/2021 12:08:43 PM	B81654
Zinc	0.013	0.0060	0.010		mg/L	1	9/29/2021 12:08:43 PM	B81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0027	0.00012	0.0010		mg/L	1	9/29/2021 4:37:32 PM	C81686
Copper	ND	0.00037	0.0010		mg/L	1	9/29/2021 4:37:32 PM	C81686
Lead	0.0013	0.000057	0.00050		mg/L	1	10/4/2021 12:08:25 PM	C81765
Selenium	0.00055	0.00034	0.0010	J	mg/L	1	9/29/2021 4:37:32 PM	C81686
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 11:44:26 AM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 10:15:00 AM
Lab ID: 2109B85-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	44	1.1	5.0		µg/L	5	9/24/2021 4:05:08 PM	R81591
Toluene	ND	1.0	5.0		µg/L	5	9/24/2021 4:05:08 PM	R81591
Ethylbenzene	5.1	1.1	5.0		µg/L	5	9/24/2021 4:05:08 PM	R81591
Methyl tert-butyl ether (MTBE)	350	2.0	5.0		µg/L	5	9/24/2021 4:05:08 PM	R81591
1,2,4-Trimethylbenzene	ND	0.61	5.0		µg/L	5	9/24/2021 4:05:08 PM	R81591
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	9/24/2021 4:05:08 PM	R81591
1,2-Dichloroethane (EDC)	1.4	1.3	5.0	J	µg/L	5	9/24/2021 4:05:08 PM	R81591
Acetone	23	13	50	J	µg/L	5	9/24/2021 4:05:08 PM	R81591
2-Butanone	ND	10	50		µg/L	5	9/24/2021 4:05:08 PM	R81591
1,1-Dichloroethane	2.1	1.4	5.0	J	µg/L	5	9/24/2021 4:05:08 PM	R81591
Isopropylbenzene	ND	0.91	5.0		µg/L	5	9/24/2021 4:05:08 PM	R81591
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	9/24/2021 4:05:08 PM	R81591
4-Methyl-2-pentanone	ND	4.4	50		µg/L	5	9/24/2021 4:05:08 PM	R81591
Methylene Chloride	2.6	2.5	15	J	µg/L	5	9/24/2021 4:05:08 PM	R81591
n-Butylbenzene	ND	1.3	15		µg/L	5	9/24/2021 4:05:08 PM	R81591
n-Propylbenzene	ND	0.91	5.0		µg/L	5	9/24/2021 4:05:08 PM	R81591
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	9/24/2021 4:05:08 PM	R81591
Xylenes, Total	ND	1.9	7.5		µg/L	5	9/24/2021 4:05:08 PM	R81591
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	5	9/24/2021 4:05:08 PM	R81591
Surr: 4-Bromofluorobenzene	97.0	0	70-130		%Rec	5	9/24/2021 4:05:08 PM	R81591
Surr: Dibromofluoromethane	102	0	70-130		%Rec	5	9/24/2021 4:05:08 PM	R81591
Surr: Toluene-d8	109	0	70-130		%Rec	5	9/24/2021 4:05:08 PM	R81591
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.32	0.061	0.25		mg/L	5	9/24/2021 4:05:08 PM	G81591
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	5	9/24/2021 4:05:08 PM	G81591

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 10:15:00 AM
Lab ID: 2109B85-005B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	9/29/2021 2:55:06 PM	62893

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 10:15:00 AM
Lab ID: 2109B85-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **BRM**	
Diesel Range Organics (DRO)	7.1	0.080	0.32		mg/L	5	9/30/2021 10:15:09 AM	62819
Motor Oil Range Organics (MRO)	1.7	0.26	0.40		mg/L	5	9/30/2021 10:15:09 AM	62819
Surr: DNOP	79.0	0	15-142		%Rec	5	9/30/2021 10:15:09 AM	62819

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 10:15:00 AM
Lab ID: 2109B85-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	11	200	D	µg/L	10	9/30/2021 7:17:26 AM	62838
Bis(2-ethylhexyl)phthalate	ND	45	100	D	µg/L	10	9/30/2021 7:17:26 AM	62838
Di-n-octyl phthalate	ND	31	200	D	µg/L	10	9/30/2021 7:17:26 AM	62838
Dimethyl phthalate	ND	20	100	D	µg/L	10	9/30/2021 7:17:26 AM	62838
2,4-Dimethylphenol	ND	9.7	50	D	µg/L	10	9/30/2021 7:17:26 AM	62838
Phenol	ND	3.3	50	D	µg/L	10	9/30/2021 7:17:26 AM	62838
Surr: 2-Fluorophenol	0	0	15-87	SD	%Rec	10	9/30/2021 7:17:26 AM	62838
Surr: Phenol-d5	0	0	15-67.5	SD	%Rec	10	9/30/2021 7:17:26 AM	62838
Surr: 2,4,6-Tribromophenol	0	0	15-122	SD	%Rec	10	9/30/2021 7:17:26 AM	62838
Surr: Nitrobenzene-d5	0	0	15-103	SD	%Rec	10	9/30/2021 7:17:26 AM	62838
Surr: 2-Fluorobiphenyl	0	0	15-103	SD	%Rec	10	9/30/2021 7:17:26 AM	62838
Surr: 4-Terphenyl-d14	0	0	45-137	SD	%Rec	10	9/30/2021 7:17:26 AM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.8	0.48	10	JD	µg/L	10	9/30/2021 6:02:00 PM	62813
Naphthalene	ND	0.34	1.0	D	µg/L	10	9/30/2021 6:02:00 PM	62813
1-Methylnaphthalene	ND	0.24	1.0	D	µg/L	10	9/30/2021 6:02:00 PM	62813
2-Methylnaphthalene	ND	0.34	1.0	D	µg/L	10	9/30/2021 6:02:00 PM	62813
Acenaphthene	ND	0.31	1.0	D	µg/L	10	9/30/2021 6:02:00 PM	62813
Fluorene	ND	0.31	1.0	D	µg/L	10	9/30/2021 6:02:00 PM	62813
Phenanthrene	ND	0.57	1.0	D	µg/L	10	9/30/2021 6:02:00 PM	62813
Anthracene	ND	0.34	1.0	D	µg/L	10	9/30/2021 6:02:00 PM	62813
Surr: 2-Fluorobiphenyl	0	0	15-84.5	SD	%Rec	10	9/30/2021 6:02:00 PM	62813

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 10:15:00 AM
Lab ID: 2109B85-005E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	1.8	0.20	0.50		mg/L	5	9/22/2021 6:00:36 PM	R81507
Chloride	1300	25	50	*	mg/L	100	9/27/2021 4:00:31 PM	R81599
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	9/22/2021 6:00:36 PM	R81507
Nitrogen, Nitrate (As N)	ND	0.050	0.50		mg/L	5	9/22/2021 6:00:36 PM	R81507
Sulfate	9.6	1.2	2.5		mg/L	5	9/22/2021 6:00:36 PM	R81507

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 10:15:00 AM
Lab ID: 2109B85-005F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	1.3	0.0082	0.015		mg/L	5	9/24/2021 2:51:10 PM	62794
Chromium	ND	0.011	0.030		mg/L	5	9/24/2021 2:51:10 PM	62794
Iron	2.0	0.064	0.25	*	mg/L	5	9/28/2021 11:37:55 AM	62794
Manganese	1.5	0.0041	0.010	*	mg/L	5	9/24/2021 2:51:10 PM	62794
Silver	ND	0.0063	0.025		mg/L	5	9/24/2021 2:51:10 PM	62794
Zinc	0.037	0.032	0.050	J	mg/L	5	9/24/2021 2:51:10 PM	62794
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0086	0.00013	0.0010		mg/L	1	9/30/2021 5:11:47 PM	62794
Copper	0.0039	0.00040	0.0010		mg/L	1	9/30/2021 5:11:47 PM	62794
Lead	0.013	0.000061	0.00050		mg/L	1	9/30/2021 5:11:47 PM	62794
Selenium	0.0020	0.00037	0.0010		mg/L	1	9/30/2021 5:11:47 PM	62794
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 11:46:51 AM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 10:15:00 AM
Lab ID: 2109B85-005G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	1.2	0.0056	0.010		mg/L	5	9/29/2021 12:12:06 PM	B81654
Cadmium	ND	0.0060	0.010		mg/L	5	9/29/2021 12:12:06 PM	B81654
Chromium	ND	0.0098	0.030		mg/L	5	9/29/2021 12:12:06 PM	B81654
Iron	0.94	0.052	0.10	*	mg/L	5	9/29/2021 12:12:06 PM	B81654
Manganese	1.4	0.0029	0.010	*	mg/L	5	9/29/2021 12:12:06 PM	B81654
Silver	ND	0.0063	0.025		mg/L	5	9/29/2021 12:12:06 PM	B81654
Zinc	0.039	0.030	0.050	J	mg/L	5	9/29/2021 12:12:06 PM	B81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0076	0.00012	0.0010		mg/L	1	9/29/2021 4:40:11 PM	C81686
Copper	0.0028	0.00037	0.0010		mg/L	1	9/29/2021 4:40:11 PM	C81686
Lead	0.0080	0.000057	0.00050		mg/L	1	10/4/2021 12:22:38 PM	C81765
Selenium	0.0015	0.00034	0.0010		mg/L	1	9/29/2021 4:40:11 PM	C81686
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 11:54:05 AM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 10:35:00 AM
Lab ID: 2109B85-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	1200	23	100		µg/L	100	9/27/2021 4:53:46 PM	R81622
Toluene	ND	2.0	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
Ethylbenzene	280	2.1	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
Methyl tert-butyl ether (MTBE)	150	3.9	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
1,2,4-Trimethylbenzene	ND	1.2	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
1,2-Dichloroethane (EDC)	ND	2.5	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
Acetone	26	25	100	J	µg/L	10	9/24/2021 4:33:52 PM	R81591
Bromodichloromethane	ND	2.0	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
4-Chlorotoluene	ND	3.4	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
cis-1,2-DCE	ND	3.9	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
1,1-Dichloroethane	ND	2.7	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
1,1-Dichloroethene	ND	2.0	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
Isopropylbenzene	22	1.8	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
4-Isopropyltoluene	ND	2.0	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
n-Butylbenzene	ND	2.5	30		µg/L	10	9/24/2021 4:33:52 PM	R81591
n-Propylbenzene	20	1.8	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
sec-Butylbenzene	2.8	1.4	10	J	µg/L	10	9/24/2021 4:33:52 PM	R81591
tert-Butylbenzene	ND	2.4	10		µg/L	10	9/24/2021 4:33:52 PM	R81591
Xylenes, Total	14	3.7	15	J	µg/L	10	9/24/2021 4:33:52 PM	R81591
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%Rec	10	9/24/2021 4:33:52 PM	R81591
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	10	9/24/2021 4:33:52 PM	R81591
Surr: Dibromofluoromethane	105	0	70-130		%Rec	10	9/24/2021 4:33:52 PM	R81591
Surr: Toluene-d8	113	0	70-130		%Rec	10	9/24/2021 4:33:52 PM	R81591
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	5.0	0.12	0.50		mg/L	10	9/24/2021 4:33:52 PM	G81591
Surr: 4-Bromofluorobenzene	111	0	70-130		%Rec	10	9/24/2021 4:33:52 PM	G81591

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 10:35:00 AM
Lab ID: 2109B85-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.7	0.016	0.064		mg/L	1	9/28/2021 7:43:22 AM	62819
Motor Oil Range Organics (MRO)	0.27	0.052	0.080		mg/L	1	9/28/2021 7:43:22 AM	62819
Surr: DNOP	93.2	0	15-142		%Rec	1	9/28/2021 7:43:22 AM	62819

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 10:35:00 AM
Lab ID: 2109B85-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/29/2021 8:02:42 PM	62838
Benzoic acid	ND	1.1	20		µg/L	1	9/29/2021 8:02:42 PM	62838
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/29/2021 8:02:42 PM	62838
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/29/2021 8:02:42 PM	62838
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/29/2021 8:02:42 PM	62838
Phenol	19	0.33	5.0		µg/L	1	9/29/2021 8:02:42 PM	62838
Surr: 2-Fluorophenol	42.9	0	15-87		%Rec	1	9/29/2021 8:02:42 PM	62838
Surr: Phenol-d5	32.2	0	15-67.5		%Rec	1	9/29/2021 8:02:42 PM	62838
Surr: 2,4,6-Tribromophenol	60.3	0	15-122		%Rec	1	9/29/2021 8:02:42 PM	62838
Surr: Nitrobenzene-d5	54.9	0	15-103		%Rec	1	9/29/2021 8:02:42 PM	62838
Surr: 2-Fluorobiphenyl	49.3	0	15-103		%Rec	1	9/29/2021 8:02:42 PM	62838
Surr: 4-Terphenyl-d14	73.3	0	45-137		%Rec	1	9/29/2021 8:02:42 PM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	2.0	0.48	10	JD	µg/L	10	9/30/2021 6:46:00 PM	62813
Naphthalene	25	0.34	1.0	D	µg/L	10	9/30/2021 6:46:00 PM	62813
1-Methylnaphthalene	38	0.24	1.0	D	µg/L	10	9/30/2021 6:46:00 PM	62813
2-Methylnaphthalene	14	0.34	1.0	D	µg/L	10	9/30/2021 6:46:00 PM	62813
Acenaphthene	2.8	0.31	1.0	D	µg/L	10	9/30/2021 6:46:00 PM	62813
Fluorene	3.2	0.31	1.0	D	µg/L	10	9/30/2021 6:46:00 PM	62813
Phenanthrene	ND	0.57	1.0	D	µg/L	10	9/30/2021 6:46:00 PM	62813
Anthracene	ND	0.34	1.0	D	µg/L	10	9/30/2021 6:46:00 PM	62813
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	9/30/2021 6:46:00 PM	62813
Surr: 2-Fluorobiphenyl	0	0	15-84.5	SD	%Rec	10	9/30/2021 6:46:00 PM	62813

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 10:35:00 AM
Lab ID: 2109B85-006E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	1.8	0.20	0.50		mg/L	5	9/22/2021 6:52:07 PM	R81507
Chloride	300	5.0	10	*	mg/L	20	9/22/2021 7:04:58 PM	R81507
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	9/22/2021 6:52:07 PM	R81507
Nitrogen, Nitrate (As N)	ND	0.050	0.50		mg/L	5	9/22/2021 6:52:07 PM	R81507
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	9/22/2021 6:52:07 PM	R81507
Sulfate	ND	1.2	2.5		mg/L	5	9/22/2021 6:52:07 PM	R81507

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 10:35:00 AM
Lab ID: 2109B85-006F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	3.7	0.016	0.030	*	mg/L	10	9/24/2021 2:55:58 PM	62794
Chromium	ND	0.0021	0.0060		mg/L	1	9/24/2021 2:54:32 PM	62794
Iron	2.3	0.13	0.50	*	mg/L	10	9/28/2021 11:39:40 AM	62794
Manganese	1.3	0.0081	0.020	*	mg/L	10	9/24/2021 2:55:58 PM	62794
Zinc	ND	0.0064	0.010		mg/L	1	9/24/2021 2:54:32 PM	62794
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0018	0.00013	0.0010		mg/L	1	9/30/2021 5:14:13 PM	62794
Copper	0.00054	0.00040	0.0010	J	mg/L	1	9/30/2021 5:14:13 PM	62794
Lead	0.00034	0.000061	0.00050	J	mg/L	1	9/30/2021 5:14:13 PM	62794
Selenium	0.00078	0.00037	0.0010	J	mg/L	1	9/30/2021 5:14:13 PM	62794
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 11:56:29 AM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 10:35:00 AM
Lab ID: 2109B85-006G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2021 12:15:30 PM	B81654
Iron	2.1	0.10	0.20	*	mg/L	10	9/29/2021 12:16:58 PM	B81654
Manganese	1.2	0.0058	0.020	*	mg/L	10	9/29/2021 12:16:58 PM	B81654
Potassium	0.35	0.16	1.0	J	mg/L	1	9/29/2021 12:15:30 PM	B81654
Sodium	330	1.4	10		mg/L	10	9/29/2021 12:16:58 PM	B81654
Zinc	0.011	0.0060	0.010		mg/L	1	9/29/2021 12:15:30 PM	B81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0017	0.00012	0.0010		mg/L	1	9/29/2021 4:42:51 PM	C81686
Copper	ND	0.00037	0.0010		mg/L	1	9/29/2021 4:42:51 PM	C81686
Lead	0.000068	0.000057	0.00050	J	mg/L	1	9/29/2021 4:42:51 PM	C81686
Selenium	ND	0.00034	0.0010		mg/L	1	9/29/2021 4:42:51 PM	C81686
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 11:58:54 AM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:00:00 AM
Lab ID: 2109B85-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	130	2.3	10		µg/L	10	9/27/2021 5:50:52 PM	R81622
Toluene	ND	0.20	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
Ethylbenzene	88	0.21	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
Methyl tert-butyl ether (MTBE)	86	0.39	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
1,2-Dichloroethane (EDC)	0.28	0.25	1.0	J	µg/L	1	9/24/2021 5:02:37 PM	R81591
Acetone	3.4	2.5	10	J	µg/L	1	9/24/2021 5:02:37 PM	R81591
Bromodichloromethane	ND	0.20	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
Isopropylbenzene	8.4	0.18	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
n-Butylbenzene	0.31	0.25	3.0	J	µg/L	1	9/24/2021 5:02:37 PM	R81591
n-Propylbenzene	5.5	0.18	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
sec-Butylbenzene	1.2	0.14	1.0		µg/L	1	9/24/2021 5:02:37 PM	R81591
tert-Butylbenzene	0.42	0.24	1.0	J	µg/L	1	9/24/2021 5:02:37 PM	R81591
Xylenes, Total	3.9	0.37	1.5		µg/L	1	9/24/2021 5:02:37 PM	R81591
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	9/24/2021 5:02:37 PM	R81591
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	9/24/2021 5:02:37 PM	R81591
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	9/24/2021 5:02:37 PM	R81591
Surr: Toluene-d8	107	0	70-130		%Rec	1	9/24/2021 5:02:37 PM	R81591
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.97	0.012	0.050		mg/L	1	9/24/2021 5:02:37 PM	G81591
Surr: 4-Bromofluorobenzene	111	0	70-130		%Rec	1	9/24/2021 5:02:37 PM	G81591

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:00:00 AM
Lab ID: 2109B85-007B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	9/29/2021 3:10:12 PM	62893

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:00:00 AM
Lab ID: 2109B85-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.62	0.016	0.064		mg/L	1	9/28/2021 8:07:00 AM	62819
Motor Oil Range Organics (MRO)	0.14	0.052	0.080		mg/L	1	9/28/2021 8:07:00 AM	62819
Surr: DNOP	90.9	0	15-142		%Rec	1	9/28/2021 8:07:00 AM	62819

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:00:00 AM
Lab ID: 2109B85-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/29/2021 8:44:13 PM	62838
Benzoic acid	ND	1.1	20		µg/L	1	9/29/2021 8:44:13 PM	62838
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/29/2021 8:44:13 PM	62838
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/29/2021 8:44:13 PM	62838
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/29/2021 8:44:13 PM	62838
Phenol	0.85	0.33	5.0	J	µg/L	1	9/29/2021 8:44:13 PM	62838
Surr: 2-Fluorophenol	51.1	0	15-87		%Rec	1	9/29/2021 8:44:13 PM	62838
Surr: Phenol-d5	37.9	0	15-67.5		%Rec	1	9/29/2021 8:44:13 PM	62838
Surr: 2,4,6-Tribromophenol	71.9	0	15-122		%Rec	1	9/29/2021 8:44:13 PM	62838
Surr: Nitrobenzene-d5	65.8	0	15-103		%Rec	1	9/29/2021 8:44:13 PM	62838
Surr: 2-Fluorobiphenyl	63.9	0	15-103		%Rec	1	9/29/2021 8:44:13 PM	62838
Surr: 4-Terphenyl-d14	96.0	0	45-137		%Rec	1	9/29/2021 8:44:13 PM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.32	0.048	1.0	J	µg/L	1	9/30/2021 7:29:00 PM	62813
Naphthalene	3.6	0.034	0.10		µg/L	1	9/30/2021 7:29:00 PM	62813
1-Methylnaphthalene	5.6	0.024	0.10		µg/L	1	9/30/2021 7:29:00 PM	62813
2-Methylnaphthalene	3.4	0.034	0.10		µg/L	1	9/30/2021 7:29:00 PM	62813
Acenaphthene	0.70	0.031	0.10		µg/L	1	9/30/2021 7:29:00 PM	62813
Fluorene	0.72	0.031	0.10		µg/L	1	9/30/2021 7:29:00 PM	62813
Phenanthrene	0.38	0.057	0.10		µg/L	1	9/30/2021 7:29:00 PM	62813
Anthracene	0.24	0.034	0.10		µg/L	1	9/30/2021 7:29:00 PM	62813
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/30/2021 7:29:00 PM	62813
Surr: 2-Fluorobiphenyl	55.0	0	15-84.5		%Rec	1	9/30/2021 7:29:00 PM	62813

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:00:00 AM
Lab ID: 2109B85-007E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	0.85	0.20	0.50		mg/L	5	9/22/2021 7:17:51 PM	R81507
Chloride	330	5.0	10	*	mg/L	20	9/22/2021 7:30:44 PM	R81507
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	9/22/2021 7:17:51 PM	R81507
Nitrogen, Nitrate (As N)	ND	0.050	0.50		mg/L	5	9/22/2021 7:17:51 PM	R81507
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	9/22/2021 7:17:51 PM	R81507
Sulfate	4.0	1.2	2.5		mg/L	5	9/22/2021 7:17:51 PM	R81507

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:00:00 AM
Lab ID: 2109B85-007F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	3.3	0.016	0.030	*	mg/L	10	9/24/2021 2:59:01 PM	62794
Chromium	ND	0.0021	0.0060		mg/L	1	9/24/2021 2:57:39 PM	62794
Iron	1.4	0.13	0.50	*	mg/L	10	9/28/2021 11:41:22 AM	62794
Manganese	1.9	0.0081	0.020	*	mg/L	10	9/24/2021 2:59:01 PM	62794
Zinc	ND	0.0064	0.010		mg/L	1	9/24/2021 2:57:39 PM	62794
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0036	0.00013	0.0010		mg/L	1	9/30/2021 5:16:38 PM	62794
Copper	0.00073	0.00040	0.0010	J	mg/L	1	9/30/2021 5:16:38 PM	62794
Lead	0.00031	0.000061	0.00050	J	mg/L	1	9/30/2021 5:16:38 PM	62794
Selenium	0.00059	0.00037	0.0010	J	mg/L	1	9/30/2021 5:16:38 PM	62794
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 12:01:19 PM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:00:00 AM
Lab ID: 2109B85-007G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2021 12:23:48 PM	B81654
Iron	0.18	0.010	0.020		mg/L	1	9/29/2021 12:23:48 PM	B81654
Manganese	1.8	0.0058	0.020	*	mg/L	10	9/29/2021 12:25:32 PM	B81654
Potassium	0.45	0.16	1.0	J	mg/L	1	9/29/2021 12:23:48 PM	B81654
Sodium	370	1.4	10		mg/L	10	9/29/2021 12:25:32 PM	B81654
Zinc	0.011	0.0060	0.010		mg/L	1	9/29/2021 12:23:48 PM	B81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0030	0.00012	0.0010		mg/L	1	9/29/2021 4:45:31 PM	C81686
Copper	0.00050	0.00037	0.0010	J	mg/L	1	9/29/2021 4:45:31 PM	C81686
Lead	ND	0.000057	0.00050		mg/L	1	9/29/2021 4:45:31 PM	C81686
Selenium	0.00039	0.00034	0.0010	J	mg/L	1	9/29/2021 4:45:31 PM	C81686
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 12:03:44 PM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:15:00 AM
Lab ID: 2109B85-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.79	0.23	1.0	J	µg/L	1	9/24/2021 5:31:17 PM	R81591
Toluene	ND	0.20	1.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
Ethylbenzene	12	0.21	1.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
Methyl tert-butyl ether (MTBE)	75	0.39	1.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
1,2-Dichloroethane (EDC)	0.28	0.25	1.0	J	µg/L	1	9/24/2021 5:31:17 PM	R81591
Acetone	2.9	2.5	10	J	µg/L	1	9/24/2021 5:31:17 PM	R81591
Bromodichloromethane	ND	0.20	1.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
Isopropylbenzene	1.4	0.18	1.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
n-Propylbenzene	0.53	0.18	1.0	J	µg/L	1	9/24/2021 5:31:17 PM	R81591
sec-Butylbenzene	0.18	0.14	1.0	J	µg/L	1	9/24/2021 5:31:17 PM	R81591
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/24/2021 5:31:17 PM	R81591
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/24/2021 5:31:17 PM	R81591
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	9/24/2021 5:31:17 PM	R81591
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	9/24/2021 5:31:17 PM	R81591
Surr: Dibromofluoromethane	105	0	70-130		%Rec	1	9/24/2021 5:31:17 PM	R81591
Surr: Toluene-d8	106	0	70-130		%Rec	1	9/24/2021 5:31:17 PM	R81591
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.17	0.012	0.050		mg/L	1	9/24/2021 5:31:17 PM	G81591
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	9/24/2021 5:31:17 PM	G81591

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:15:00 AM
Lab ID: 2109B85-008C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.43	0.016	0.064		mg/L	1	9/28/2021 8:30:38 AM	62819
Motor Oil Range Organics (MRO)	0.14	0.052	0.080		mg/L	1	9/28/2021 8:30:38 AM	62819
Surr: DNOP	93.3	0	15-142		%Rec	1	9/28/2021 8:30:38 AM	62819

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:15:00 AM
Lab ID: 2109B85-008D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/29/2021 9:25:37 PM	62838
Benzoic acid	ND	1.1	20		µg/L	1	9/29/2021 9:25:37 PM	62838
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/29/2021 9:25:37 PM	62838
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/29/2021 9:25:37 PM	62838
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/29/2021 9:25:37 PM	62838
Phenol	ND	0.33	5.0		µg/L	1	9/29/2021 9:25:37 PM	62838
Surr: 2-Fluorophenol	48.5	0	15-87		%Rec	1	9/29/2021 9:25:37 PM	62838
Surr: Phenol-d5	34.9	0	15-67.5		%Rec	1	9/29/2021 9:25:37 PM	62838
Surr: 2,4,6-Tribromophenol	74.2	0	15-122		%Rec	1	9/29/2021 9:25:37 PM	62838
Surr: Nitrobenzene-d5	56.8	0	15-103		%Rec	1	9/29/2021 9:25:37 PM	62838
Surr: 2-Fluorobiphenyl	58.3	0	15-103		%Rec	1	9/29/2021 9:25:37 PM	62838
Surr: 4-Terphenyl-d14	90.3	0	45-137		%Rec	1	9/29/2021 9:25:37 PM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.36	0.048	1.0	J	µg/L	1	9/30/2021 8:14:00 PM	62813
Naphthalene	0.10	0.034	0.10		µg/L	1	9/30/2021 8:14:00 PM	62813
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	9/30/2021 8:14:00 PM	62813
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	9/30/2021 8:14:00 PM	62813
Acenaphthene	0.12	0.031	0.10		µg/L	1	9/30/2021 8:14:00 PM	62813
Fluorene	ND	0.031	0.10		µg/L	1	9/30/2021 8:14:00 PM	62813
Phenanthrene	ND	0.057	0.10		µg/L	1	9/30/2021 8:14:00 PM	62813
Anthracene	ND	0.034	0.10		µg/L	1	9/30/2021 8:14:00 PM	62813
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/30/2021 8:14:00 PM	62813
Surr: 2-Fluorobiphenyl	53.5	0	15-84.5		%Rec	1	9/30/2021 8:14:00 PM	62813

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:15:00 AM
Lab ID: 2109B85-008E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	0.66	0.20	0.50		mg/L	5	9/22/2021 7:43:37 PM	R81507
Chloride	340	5.0	10	*	mg/L	20	9/22/2021 7:56:30 PM	R81507
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	9/22/2021 7:43:37 PM	R81507
Nitrogen, Nitrate (As N)	0.52	0.050	0.50		mg/L	5	9/22/2021 7:43:37 PM	R81507
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	9/22/2021 7:43:37 PM	R81507
Sulfate	34	1.2	2.5		mg/L	5	9/22/2021 7:43:37 PM	R81507

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:15:00 AM
Lab ID: 2109B85-008F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.21	0.0016	0.0030		mg/L	1	9/24/2021 3:00:39 PM	62794
Chromium	ND	0.0021	0.0060		mg/L	1	9/24/2021 3:00:39 PM	62794
Iron	0.19	0.013	0.050		mg/L	1	9/28/2021 11:43:01 AM	62794
Manganese	0.44	0.00081	0.0020	*	mg/L	1	9/24/2021 3:00:39 PM	62794
Zinc	0.0089	0.0064	0.010	J	mg/L	1	9/24/2021 3:00:39 PM	62794
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.00087	0.00013	0.0010	J	mg/L	1	9/30/2021 5:19:03 PM	62794
Copper	0.0022	0.00040	0.0010		mg/L	1	9/30/2021 5:19:03 PM	62794
Lead	0.00042	0.000061	0.00050	J	mg/L	1	9/30/2021 5:19:03 PM	62794
Selenium	0.00053	0.00037	0.0010	J	mg/L	1	9/30/2021 5:19:03 PM	62794
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 12:06:09 PM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:15:00 AM
Lab ID: 2109B85-008G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2021 12:27:13 PM	B81654
Iron	0.018	0.010	0.020	J	mg/L	1	9/29/2021 12:27:13 PM	B81654
Manganese	0.40	0.00058	0.0020	*	mg/L	1	9/29/2021 12:27:13 PM	B81654
Potassium	2.1	0.16	1.0		mg/L	1	9/29/2021 12:27:13 PM	B81654
Sodium	560	1.4	10		mg/L	10	9/29/2021 12:28:54 PM	B81654
Zinc	0.019	0.0060	0.010		mg/L	1	9/29/2021 12:27:13 PM	B81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00075	0.00012	0.0010	J	mg/L	1	9/29/2021 4:48:10 PM	C81686
Copper	0.0026	0.00037	0.0010		mg/L	1	9/29/2021 4:48:10 PM	C81686
Lead	0.00017	0.000057	0.00050	J	mg/L	1	9/29/2021 4:48:10 PM	C81686
Selenium	0.00046	0.00034	0.0010	J	mg/L	1	9/29/2021 4:48:10 PM	C81686
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 12:08:35 PM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:15:00 AM
Lab ID: 2109B85-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
Toluene	ND	0.20	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
Acetone	5.7	2.5	10	J	µg/L	1	9/27/2021 6:19:26 PM	R81622
Bromomethane	ND	0.85	3.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
2-Butanone	ND	2.0	10		µg/L	1	9/27/2021 6:19:26 PM	R81622
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
Chloroethane	ND	0.38	2.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
Chloroform	ND	0.13	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
Chloromethane	ND	0.41	3.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
2-Hexanone	ND	1.8	10		µg/L	1	9/27/2021 6:19:26 PM	R81622
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/27/2021 6:19:26 PM	R81622
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
Styrene	ND	0.14	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/27/2021 6:19:26 PM	R81622
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/27/2021 6:19:26 PM	R81622
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	9/27/2021 6:19:26 PM	R81622
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/27/2021 6:19:26 PM	R81622
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	9/27/2021 6:19:26 PM	R81622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021 11:15:00 AM
Lab ID: 2109B85-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: Toluene-d8	106	0	70-130		%Rec	1	9/27/2021 6:19:26 PM	R81622
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/27/2021 6:19:26 PM	G81622
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	9/27/2021 6:19:26 PM	G81622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021
Lab ID: 2109B85-010A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
Toluene	ND	0.20	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
Methyl tert-butyl ether (MTBE)	0.97	0.39	1.0	J	µg/L	1	9/28/2021 5:40:24 PM	R81662
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
1,2-Dichloroethane (EDC)	0.34	0.25	1.0	J	µg/L	1	9/28/2021 5:40:24 PM	R81662
Acetone	ND	2.5	10		µg/L	1	9/28/2021 5:40:24 PM	R81662
Bromomethane	ND	0.85	3.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
2-Butanone	ND	2.0	10		µg/L	1	9/28/2021 5:40:24 PM	R81662
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
Chloroethane	ND	0.38	2.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
Chloroform	ND	0.13	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
Chloromethane	ND	0.41	3.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
1,1-Dichloroethane	0.79	0.27	1.0	J	µg/L	1	9/28/2021 5:40:24 PM	R81662
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
2-Hexanone	ND	1.8	10		µg/L	1	9/28/2021 5:40:24 PM	R81662
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/28/2021 5:40:24 PM	R81662
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
Styrene	ND	0.14	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/28/2021 5:40:24 PM	R81662
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/28/2021 5:40:24 PM	R81662
Surr: 1,2-Dichloroethane-d4	114	0	70-130		%Rec	1	9/28/2021 5:40:24 PM	R81662
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	9/28/2021 5:40:24 PM	R81662
Surr: Dibromofluoromethane	112	0	70-130		%Rec	1	9/28/2021 5:40:24 PM	R81662

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021
Lab ID: 2109B85-010A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: Toluene-d8	103	0	70-130		%Rec	1	9/28/2021 5:40:24 PM	R81662
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/28/2021 5:40:24 PM	G81662
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	9/28/2021 5:40:24 PM	G81662

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021
Lab ID: 2109B85-010B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	9/29/2021 3:25:25 PM	62893

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021
Lab ID: 2109B85-010C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.048	0.016	0.064	J	mg/L	1	9/28/2021 10:53:07 AM	62819
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/28/2021 10:53:07 AM	62819
Surr: DNOP	98.8	0	15-142		%Rec	1	9/28/2021 10:53:07 AM	62819

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021
Lab ID: 2109B85-010D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.67	6.7	D	µg/L	1	9/29/2021 10:07:06 PM	62838
Benzoic acid	ND	1.4	27	D	µg/L	1	9/29/2021 10:07:06 PM	62838
Benzyl alcohol	ND	0.91	6.7	D	µg/L	1	9/29/2021 10:07:06 PM	62838
Bis(2-ethylhexyl)phthalate	ND	6.0	13	D	µg/L	1	9/29/2021 10:07:06 PM	62838
Butyl benzyl phthalate	ND	0.98	6.7	D	µg/L	1	9/29/2021 10:07:06 PM	62838
Carbazole	ND	0.75	6.7	D	µg/L	1	9/29/2021 10:07:06 PM	62838
Di-n-octyl phthalate	ND	4.2	27	D	µg/L	1	9/29/2021 10:07:06 PM	62838
Dibenzofuran	ND	0.50	6.7	D	µg/L	1	9/29/2021 10:07:06 PM	62838
1,4-Dichlorobenzene	ND	0.94	6.7	D	µg/L	1	9/29/2021 10:07:06 PM	62838
Diethyl phthalate	ND	5.2	13	D	µg/L	1	9/29/2021 10:07:06 PM	62838
Dimethyl phthalate	ND	2.7	13	D	µg/L	1	9/29/2021 10:07:06 PM	62838
2,4-Dimethylphenol	ND	1.3	6.7	D	µg/L	1	9/29/2021 10:07:06 PM	62838
2-Methylphenol	ND	0.68	6.7	D	µg/L	1	9/29/2021 10:07:06 PM	62838
3+4-Methylphenol	ND	0.60	6.7	D	µg/L	1	9/29/2021 10:07:06 PM	62838
Pentachlorophenol	ND	0.78	27	D	µg/L	1	9/29/2021 10:07:06 PM	62838
Phenol	ND	0.43	6.7	D	µg/L	1	9/29/2021 10:07:06 PM	62838
Pyridine	ND	1.2	6.7	D	µg/L	1	9/29/2021 10:07:06 PM	62838
2,4,6-Trichlorophenol	ND	0.58	6.7	D	µg/L	1	9/29/2021 10:07:06 PM	62838
Surr: 2-Fluorophenol	40.5	0	15-87	D	%Rec	1	9/29/2021 10:07:06 PM	62838
Surr: Phenol-d5	30.3	0	15-67.5	D	%Rec	1	9/29/2021 10:07:06 PM	62838
Surr: 2,4,6-Tribromophenol	59.9	0	15-122	D	%Rec	1	9/29/2021 10:07:06 PM	62838
Surr: Nitrobenzene-d5	51.1	0	15-103	D	%Rec	1	9/29/2021 10:07:06 PM	62838
Surr: 2-Fluorobiphenyl	45.6	0	15-103	D	%Rec	1	9/29/2021 10:07:06 PM	62838
Surr: 4-Terphenyl-d14	84.6	0	45-137	D	%Rec	1	9/29/2021 10:07:06 PM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	7.2	0.048	1.0		µg/L	1	9/30/2021 8:58:00 PM	62813
Naphthalene	ND	0.034	0.10		µg/L	1	9/30/2021 8:58:00 PM	62813
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	9/30/2021 8:58:00 PM	62813
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	9/30/2021 8:58:00 PM	62813
Acenaphthene	ND	0.031	0.10		µg/L	1	9/30/2021 8:58:00 PM	62813
Fluorene	ND	0.031	0.10		µg/L	1	9/30/2021 8:58:00 PM	62813
Phenanthrene	ND	0.057	0.10		µg/L	1	9/30/2021 8:58:00 PM	62813
Anthracene	ND	0.034	0.10		µg/L	1	9/30/2021 8:58:00 PM	62813
Pyrene	0.16	0.16	0.20	J	µg/L	1	9/30/2021 8:58:00 PM	62813
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/30/2021 8:58:00 PM	62813
Chrysene	ND	0.024	0.10		µg/L	1	9/30/2021 8:58:00 PM	62813
Surr: 2-Fluorobiphenyl	62.5	0	15-84.5		%Rec	1	9/30/2021 8:58:00 PM	62813

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021
Lab ID: 2109B85-010E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	ND	0.20	0.50		mg/L	5	9/22/2021 8:09:23 PM	R81507
Chloride	3200	120	250	*	mg/L	500	9/27/2021 4:13:23 PM	R81599
Nitrogen, Nitrite (As N)	ND	0.11	2.0		mg/L	20	9/22/2021 8:22:16 PM	R81507
Nitrogen, Nitrate (As N)	0.14	0.050	0.50	J	mg/L	5	9/22/2021 8:09:23 PM	R81507
Sulfate	560	5.0	10	*	mg/L	20	9/22/2021 8:22:16 PM	R81507

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021
Lab ID: 2109B85-010F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.066	0.0016	0.0030		mg/L	1	9/28/2021 11:44:44 AM	62794
Cadmium	ND	0.0015	0.0020		mg/L	1	9/28/2021 11:44:44 AM	62794
Chromium	ND	0.0021	0.0060		mg/L	1	9/28/2021 11:44:44 AM	62794
Iron	0.71	0.013	0.050	*	mg/L	1	9/28/2021 11:44:44 AM	62794
Manganese	0.016	0.00081	0.0020		mg/L	1	9/28/2021 11:44:44 AM	62794
Silver	0.0017	0.0013	0.0050	J	mg/L	1	9/28/2021 11:44:44 AM	62794
Zinc	ND	0.0064	0.010		mg/L	1	9/28/2021 11:44:44 AM	62794
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.00094	0.00063	0.0050	J	mg/L	5	10/6/2021 4:21:08 PM	62794
Copper	0.0011	0.00040	0.0010		mg/L	1	9/30/2021 5:21:29 PM	62794
Lead	0.00079	0.00031	0.0025	J	mg/L	5	10/6/2021 4:21:08 PM	62794
Selenium	0.0025	0.0019	0.0050	J	mg/L	5	10/6/2021 4:21:08 PM	62794
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 12:11:01 PM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-21-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/21/2021
Lab ID: 2109B85-010G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.058	0.0011	0.0020		mg/L	1	9/29/2021 12:39:05 PM	B81654
Cadmium	ND	0.0012	0.0020		mg/L	1	9/29/2021 12:39:05 PM	B81654
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2021 12:39:05 PM	B81654
Iron	ND	0.010	0.020		mg/L	1	9/29/2021 12:39:05 PM	B81654
Manganese	0.0013	0.00058	0.0020	J	mg/L	1	9/29/2021 12:39:05 PM	B81654
Silver	0.0016	0.0013	0.0050	J	mg/L	1	9/29/2021 12:39:05 PM	B81654
Zinc	0.017	0.0060	0.010		mg/L	1	9/29/2021 12:39:05 PM	B81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00078	0.00012	0.0010	J	mg/L	1	10/4/2021 12:56:36 PM	C81765
Copper	0.00079	0.00037	0.0010	J	mg/L	1	10/4/2021 12:56:36 PM	C81765
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2021 12:56:36 PM	C81765
Selenium	0.0020	0.00034	0.0010		mg/L	1	10/4/2021 12:56:36 PM	C81765
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/29/2021 12:23:11 PM	62871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109B85**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2109B85-011A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	9/29/2021 3:40:33 PM	62893

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62794** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **62794** RunNo: **81569**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2882430** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS-62794** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **62794** RunNo: **81569**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2882432** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0023	0.0030	0.002000	0	116	50	150			J
Cadmium	0.0018	0.0020	0.002000	0	89.3	50	150			J
Chromium	0.0060	0.0060	0.006000	0	100	50	150			
Iron	0.023	0.050	0.02000	0	114	50	150			J
Manganese	0.0018	0.0020	0.002000	0	91.8	50	150			J
Silver	0.0050	0.0050	0.005000	0	100	50	150			
Zinc	0.012	0.010	0.01000	0	116	50	150			

Sample ID: **LCS-62794** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **62794** RunNo: **81569**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2882434** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0030	0.5000	0	104	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Iron	0.52	0.050	0.5000	0	103	85	115			
Manganese	0.50	0.0020	0.5000	0	99.6	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Zinc	0.50	0.010	0.5000	0	99.5	85	115			

Sample ID: **2109B85-001FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-09-21-21** Batch ID: **62794** RunNo: **81569**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2882535** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0030	0.5000	0	107	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2109B85-001FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-09-21-21** Batch ID: **62794** RunNo: **81569**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2882535** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.52	0.0020	0.5000	0	105	70	130			
Chromium	0.53	0.0060	0.5000	0	105	70	130			
Iron	0.54	0.050	0.5000	0	108	70	130			
Manganese	0.51	0.0020	0.5000	0	101	70	130			
Silver	0.10	0.0050	0.1000	0	103	70	130			
Zinc	0.51	0.010	0.5000	0	103	70	130			

Sample ID: **2109B85-001FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-09-21-21** Batch ID: **62794** RunNo: **81569**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2882539** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0030	0.5000	0	107	70	130	0.121	20	
Cadmium	0.52	0.0020	0.5000	0	105	70	130	0.116	20	
Chromium	0.53	0.0060	0.5000	0	105	70	130	0.0508	20	
Iron	0.55	0.050	0.5000	0	110	70	130	2.14	20	
Manganese	0.51	0.0020	0.5000	0	102	70	130	1.09	20	
Silver	0.10	0.0050	0.1000	0	104	70	130	0.140	20	
Zinc	0.51	0.010	0.5000	0	103	70	130	0.0237	20	

Sample ID: **2109B85-002FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-40** Batch ID: **62794** RunNo: **81569**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2882542** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.59	0.0030	0.5000	0.07351	104	70	130	198	20	R
Cadmium	0.49	0.0020	0.5000	0	98.7	70	130	200	20	R
Chromium	0.52	0.0060	0.5000	0	103	70	130	200	20	R
Manganese	0.50	0.0020	0.5000	0.01624	97.2	70	130	200	20	R
Silver	0.12	0.0050	0.1000	0.001274	115	70	130	200	20	R
Zinc	0.50	0.010	0.5000	0.009870	97.2	70	130	200	20	R

Sample ID: **2109B85-002FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-40** Batch ID: **62794** RunNo: **81624**
Prep Date: **9/23/2021** Analysis Date: **9/28/2021** SeqNo: **2884605** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	1.4	0.25	0.5000	0.6487	141	70	130			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2109B85-002FMSD**	SampType: **MSD**		TestCode: **EPA Method 200.7: Metals**		
Client ID: **MKTF-40**	Batch ID: **62794**		RunNo: **81624**		
Prep Date: **9/23/2021**	Analysis Date: **9/28/2021**		SeqNo: **2884606**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	1.3	0.25	0.5000	0.6487	136	70	130	1.78	20	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B81654** RunNo: **81654**
Prep Date: Analysis Date: **9/29/2021** SeqNo: **2886856** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B81654** RunNo: **81654**
Prep Date: Analysis Date: **9/29/2021** SeqNo: **2886857** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0027	0.0020	0.002000	0	136	50	150			
Cadmium	0.0019	0.0020	0.002000	0	93.9	50	150			J
Chromium	0.0064	0.0060	0.006000	0	107	50	150			
Iron	0.020	0.020	0.02000	0	97.8	50	150			J
Manganese	0.0018	0.0020	0.002000	0	90.0	50	150			J
Potassium	0.39	1.0	0.5000	0	78.2	50	150			J
Silver	0.0045	0.0050	0.005000	0	90.4	50	150			J
Sodium	0.51	1.0	0.5000	0	102	50	150			J
Zinc	0.011	0.010	0.01000	0	109	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B81654** RunNo: **81654**
Prep Date: Analysis Date: **9/29/2021** SeqNo: **2886858** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.7	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.50	0.0060	0.5000	0	99.4	85	115			
Iron	0.48	0.020	0.5000	0	96.9	85	115			
Manganese	0.49	0.0020	0.5000	0	97.2	85	115			
Potassium	49	1.0	50.00	0	97.4	85	115			
Silver	0.10	0.0050	0.1000	0	99.6	85	115			
Sodium	49	1.0	50.00	0	98.1	85	115			
Zinc	0.48	0.010	0.5000	0	95.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2109B85-001GMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-09-21-21** Batch ID: **B81654** RunNo: **81654**
Prep Date: Analysis Date: **9/29/2021** SeqNo: **2886874** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	70	130			
Cadmium	0.50	0.0020	0.5000	0	101	70	130			
Chromium	0.50	0.0060	0.5000	0	99.2	70	130			
Iron	0.50	0.020	0.5000	0	100	70	130			
Manganese	0.49	0.0020	0.5000	0	97.8	70	130			
Silver	0.10	0.0050	0.1000	0	100	70	130			
Zinc	0.52	0.010	0.5000	0.007969	102	70	130			

Sample ID: **2109B85-001GMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-09-21-21** Batch ID: **B81654** RunNo: **81654**
Prep Date: Analysis Date: **9/29/2021** SeqNo: **2886875** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	101	70	130	0.977	20	
Cadmium	0.51	0.0020	0.5000	0	101	70	130	0.905	20	
Chromium	0.50	0.0060	0.5000	0	100	70	130	1.19	20	
Iron	0.50	0.020	0.5000	0	101	70	130	0.160	20	
Manganese	0.49	0.0020	0.5000	0	98.8	70	130	0.983	20	
Silver	0.10	0.0050	0.1000	0	101	70	130	0.986	20	
Zinc	0.52	0.010	0.5000	0.007969	102	70	130	0.430	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62794** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **62794** RunNo: **81552**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2881782** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLLLCS-62794** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **62794** RunNo: **81552**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2881783** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00099	0.0010	0.001000	0	98.7	50	150			J
Copper	0.0011	0.0010	0.001000	0	114	50	150			
Lead	0.00052	0.00050	0.0005000	0	103	50	150			
Selenium	0.0014	0.0010	0.001000	0	143	50	150			

Sample ID: **MSLCS-62794** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **62794** RunNo: **81552**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2881784** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Copper	0.026	0.0010	0.02500	0	104	85	115			
Lead	0.013	0.00050	0.01250	0	105	85	115			
Selenium	0.027	0.0010	0.02500	0	107	85	115			

Sample ID: **2109B85-003FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-25** Batch ID: **62794** RunNo: **81711**
Prep Date: **9/23/2021** Analysis Date: **9/30/2021** SeqNo: **2888707** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.030	0.0010	0.02500	0.003121	108	70	130			
Copper	0.025	0.0010	0.02500	0.0009390	95.7	70	130			
Lead	0.012	0.00050	0.01250	0.0001931	93.8	70	130			
Selenium	0.027	0.0010	0.02500	0.0005589	105	70	130			

Sample ID: **2109B85-003FMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-25** Batch ID: **62794** RunNo: **81711**
Prep Date: **9/23/2021** Analysis Date: **9/30/2021** SeqNo: **2888709** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2109B85-003FMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-25** Batch ID: **62794** RunNo: **81711**
Prep Date: **9/23/2021** Analysis Date: **9/30/2021** SeqNo: **2888709** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.029	0.0010	0.02500	0.003121	103	70	130	4.31	20	
Copper	0.025	0.0010	0.02500	0.0009390	96.2	70	130	0.550	20	
Lead	0.012	0.00050	0.01250	0.0001931	91.6	70	130	2.34	20	
Selenium	0.026	0.0010	0.02500	0.0005589	103	70	130	2.19	20	

Sample ID: **2109B85-004FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-24** Batch ID: **62794** RunNo: **81711**
Prep Date: **9/23/2021** Analysis Date: **9/30/2021** SeqNo: **2888712** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.031	0.0010	0.02500	0.002921	111	70	130			
Copper	0.025	0.0010	0.02500	0.0006289	98.4	70	130			
Lead	0.014	0.00050	0.01250	0.002201	97.0	70	130			
Selenium	0.027	0.0010	0.02500	0.0008213	103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **C81686** RunNo: **81686**
Prep Date: Analysis Date: **9/29/2021** SeqNo: **2887260** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **C81686** RunNo: **81686**
Prep Date: Analysis Date: **9/29/2021** SeqNo: **2887261** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00098	0.0010	0.001000	0	98.3	50	150			J
Copper	0.0011	0.0010	0.001000	0	115	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.00082	0.0010	0.001000	0	81.6	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **C81686** RunNo: **81686**
Prep Date: Analysis Date: **9/29/2021** SeqNo: **2887262** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.4	85	115			
Copper	0.025	0.0010	0.02500	0	99.2	85	115			
Lead	0.012	0.00050	0.01250	0	98.1	85	115			
Selenium	0.022	0.0010	0.02500	0	88.9	85	115			

Sample ID: **2109B85-001GMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-09-21-21** Batch ID: **C81686** RunNo: **81686**
Prep Date: Analysis Date: **9/29/2021** SeqNo: **2887283** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	100	70	130			
Copper	0.026	0.0010	0.02500	0	102	70	130			
Lead	0.012	0.00050	0.01250	0	99.7	70	130			
Selenium	0.024	0.0010	0.02500	0	97.8	70	130			

Sample ID: **2109B85-004GMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-24** Batch ID: **C81765** RunNo: **81765**
Prep Date: Analysis Date: **10/4/2021** SeqNo: **2892021** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2109B85-004GMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-24** Batch ID: **C81765** RunNo: **81765**
Prep Date: Analysis Date: **10/4/2021** SeqNo: **2892021** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0.001270	94.8	70	130			

Sample ID: **2109B85-004GMSDL** SampType: **MSD** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-24** Batch ID: **C81765** RunNo: **81765**
Prep Date: Analysis Date: **10/4/2021** SeqNo: **2892022** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0.001270	94.9	70	130	0.103	20	

Sample ID: **2109B85-005GMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **OAPIS-1** Batch ID: **C81765** RunNo: **81765**
Prep Date: Analysis Date: **10/4/2021** SeqNo: **2892027** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.019	0.00050	0.01250	0.007998	91.9	70	130			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **C81765** RunNo: **81765**
Prep Date: Analysis Date: **10/4/2021** SeqNo: **2892041** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **C81765** RunNo: **81765**
Prep Date: Analysis Date: **10/4/2021** SeqNo: **2892043** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	106	85	115			
Copper	0.027	0.0010	0.02500	0	109	85	115			
Lead	0.012	0.00050	0.01250	0	99.9	85	115			
Selenium	0.027	0.0010	0.02500	0	107	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C81765**	RunNo: **81765**
Prep Date:	Analysis Date: **10/4/2021**	SeqNo: **2892047** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Copper	0.0012	0.0010	0.001000	0	118	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.0011	0.0010	0.001000	0	106	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**

03-Nov-21

Client: Marathon

Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62871** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **62871** RunNo: **81659**
Prep Date: **9/28/2021** Analysis Date: **9/29/2021** SeqNo: **2886350** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-62871** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **62871** RunNo: **81659**
Prep Date: **9/28/2021** Analysis Date: **9/29/2021** SeqNo: **2886351** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00011	0.00020	0.0001500	0	76.7	50	150			J

Sample ID: **LCS-62871** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **62871** RunNo: **81659**
Prep Date: **9/28/2021** Analysis Date: **9/29/2021** SeqNo: **2886352** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.1	85	115			

Sample ID: **2109B85-010FMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP-09-21-21** Batch ID: **62871** RunNo: **81659**
Prep Date: **9/28/2021** Analysis Date: **9/29/2021** SeqNo: **2886382** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.00020	0.005000	0	93.3	75	125			

Sample ID: **2109B85-010FMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP-09-21-21** Batch ID: **62871** RunNo: **81659**
Prep Date: **9/28/2021** Analysis Date: **9/29/2021** SeqNo: **2886383** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.00020	0.005000	0	93.4	75	125	0.0781	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R81507**	RunNo: **81507**
Prep Date:	Analysis Date: **9/22/2021**	SeqNo: **2879514** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R81507**	RunNo: **81507**
Prep Date:	Analysis Date: **9/22/2021**	SeqNo: **2879515** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	105	90	110			
Chloride	5.0	0.50	5.000	0	99.4	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	100	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	105	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	94.8	90	110			
Sulfate	10	0.50	10.00	0	103	90	110			

Sample ID: **2109B85-001EMS**	SampType: **ms**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB-09-21-21**	Batch ID: **R81507**	RunNo: **81507**
Prep Date:	Analysis Date: **9/22/2021**	SeqNo: **2879536** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	73.3	111			
Chloride	4.9	0.50	5.000	0	97.4	84.2	117			
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	97.6	75.5	113			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0.05050	101	86.8	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.8	70.5	118			
Sulfate	10	0.50	10.00	0	99.6	83.3	112			

Sample ID: **2109B85-001EMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB-09-21-21**	Batch ID: **R81507**	RunNo: **81507**
Prep Date:	Analysis Date: **9/22/2021**	SeqNo: **2879537** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	73.3	111	0.308	20	
Chloride	4.9	0.50	5.000	0	97.0	84.2	117	0.382	20	
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	96.9	75.5	113	0.719	20	
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0.05050	101	86.8	110	0.244	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2109B85-001EMSD** SampType: **msd** TestCode: **EPA Method 300.0: Anions**
Client ID: **EB-09-21-21** Batch ID: **R81507** RunNo: **81507**
Prep Date: Analysis Date: **9/22/2021** SeqNo: **2879537** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.2	70.5	118	0.635	20	
Sulfate	9.9	0.50	10.00	0	99.1	83.3	112	0.516	20	

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R81599** RunNo: **81599**
Prep Date: Analysis Date: **9/27/2021** SeqNo: **2883578** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R81599** RunNo: **81599**
Prep Date: Analysis Date: **9/27/2021** SeqNo: **2883579** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.4	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62893** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **62893** RunNo: **81675**
Prep Date: **9/29/2021** Analysis Date: **9/29/2021** SeqNo: **2887201** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-62893** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **62893** RunNo: **81675**
Prep Date: **9/29/2021** Analysis Date: **9/29/2021** SeqNo: **2887224** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-62893** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **62893** RunNo: **81675**
Prep Date: **9/29/2021** Analysis Date: **9/29/2021** SeqNo: **2887237** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.099	0.010	0.1000	0	99.4	70	130			

Sample ID: **2109B85-011AMS** SampType: **MS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **Trip Blank** Batch ID: **62893** RunNo: **81675**
Prep Date: **9/29/2021** Analysis Date: **9/29/2021** SeqNo: **2887327** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.093	0.0094	0.09383	0	99.2	65	135			

Sample ID: **2109B85-011AMSD** SampType: **MSD** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **Trip Blank** Batch ID: **62893** RunNo: **81675**
Prep Date: **9/29/2021** Analysis Date: **9/29/2021** SeqNo: **2887329** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.090	0.0093	0.09259	0	97.2	65	135	3.38	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62819**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW**	Batch ID: **62819**	RunNo: **81612**
Prep Date: **9/24/2021**	Analysis Date: **9/28/2021**	SeqNo: **2885981** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.035		0.03750		92.9	15	142			

Sample ID: **LCS-62819**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW**	Batch ID: **62819**	RunNo: **81612**
Prep Date: **9/24/2021**	Analysis Date: **9/28/2021**	SeqNo: **2885984** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.10	0.064	0.1875	0	53.9	21.1	126			
Surr: DNOP	0.018		0.01875		97.8	15	142			

Sample ID: **LCSD-62819**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02**	Batch ID: **62819**	RunNo: **81612**
Prep Date: **9/24/2021**	Analysis Date: **9/28/2021**	SeqNo: **2885985** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.13	0.064	0.1875	0	71.4	21.1	126	27.9	20	R
Surr: DNOP	0.018		0.01875		95.4	15	142	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **100ng lcs-2** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R81591** RunNo: **81591**
Prep Date: Analysis Date: **9/24/2021** SeqNo: **2883318** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	24	1.0	20.00	0	119	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	21	1.0	20.00	0	107	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	96.0	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		110	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	11		10.00		109	70	130			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R81591** RunNo: **81591**
Prep Date: Analysis Date: **9/24/2021** SeqNo: **2883328** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromodichloromethane	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81591**	RunNo: **81591**
Prep Date:	Analysis Date: **9/24/2021**	SeqNo: **2883328** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		115	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.9	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	11		10.00		109	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R81622**	RunNo: **81622**
Prep Date:	Analysis Date: **9/27/2021**	SeqNo: **2884501** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	25	1.0	20.00	0	123	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	22	1.0	20.00	0	108	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	94.6	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	104	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81622**	RunNo: **81622**
Prep Date:	Analysis Date: **9/27/2021**	SeqNo: **2884520** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81622**	RunNo: **81622**
Prep Date:	Analysis Date: **9/27/2021**	SeqNo: **2884520** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		113	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R81622** RunNo: **81622**
Prep Date: Analysis Date: **9/27/2021** SeqNo: **2884520** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	11		10.00		108	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R81662** RunNo: **81662**
Prep Date: Analysis Date: **9/28/2021** SeqNo: **2886454** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	25	1.0	20.00	0	125	70	130			
Toluene	20	1.0	20.00	0	99.7	70	130			
Chlorobenzene	20	1.0	20.00	0	97.9	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	98.8	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		114	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R81662** RunNo: **81662**
Prep Date: Analysis Date: **9/28/2021** SeqNo: **2886476** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81662**	RunNo: **81662**
Prep Date:	Analysis Date: **9/28/2021**	SeqNo: **2886476** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		120	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb-62838** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **62838** RunNo: **81683**
Prep Date: **9/27/2021** Analysis Date: **9/29/2021** SeqNo: **2887151** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Benzoic acid	ND	20								
Benzyl alcohol	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	10								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
Di-n-octyl phthalate	ND	20								
Dibenzofuran	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Pentachlorophenol	ND	20								
Phenol	ND	5.0								
Pyridine	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	100		200.0		50.7	15	87			
Surr: Phenol-d5	75		200.0		37.6	15	67.5			
Surr: 2,4,6-Tribromophenol	130		200.0		64.0	15	122			
Surr: Nitrobenzene-d5	56		100.0		56.2	15	103			
Surr: 2-Fluorobiphenyl	56		100.0		56.4	15	103			
Surr: 4-Terphenyl-d14	110		100.0		107	45	137			

Sample ID: **lcs-62838** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **62838** RunNo: **81683**
Prep Date: **9/27/2021** Analysis Date: **9/29/2021** SeqNo: **2887152** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	49	5.0	100.0	0	48.6	15	87.6			
Pentachlorophenol	130	20	200.0	0	66.1	21	111			
Phenol	69	5.0	200.0	0	34.3	16.8	70.5			
Surr: 2-Fluorophenol	95		200.0		47.7	15	84.2			
Surr: Phenol-d5	72		200.0		36.2	15	67.5			
Surr: 2,4,6-Tribromophenol	130		200.0		64.8	15	115			
Surr: Nitrobenzene-d5	56		100.0		56.4	15	103			
Surr: 2-Fluorobiphenyl	56		100.0		55.5	15	105			
Surr: 4-Terphenyl-d14	89		100.0		89.3	42.3	137			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **lcsd-62838** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **62838** RunNo: **81683**
Prep Date: **9/27/2021** Analysis Date: **9/29/2021** SeqNo: **2887153** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	62	5.0	100.0	0	62.4	15	87.6	24.9	30.4	
Pentachlorophenol	120	20	200.0	0	60.6	21	111	8.68	71.6	
Phenol	89	5.0	200.0	0	44.5	16.8	70.5	26.0	37.2	
Surr: 2-Fluorophenol	110		200.0		56.7	15	87	0	0	
Surr: Phenol-d5	87		200.0		43.4	15	67.5	0	0	
Surr: 2,4,6-Tribromophenol	130		200.0		63.6	15	122	0	0	
Surr: Nitrobenzene-d5	69		100.0		68.6	15	103	0	0	
Surr: 2-Fluorobiphenyl	67		100.0		66.6	15	103	0	0	
Surr: 4-Terphenyl-d14	100		100.0		99.6	45	137	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb-62813** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **62813** RunNo: **81719**
Prep Date: **9/24/2021** Analysis Date: **9/30/2021** SeqNo: **2889277** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Surr: Nitrobenzene-d5	2.2		4.000		54.0	21.9	89.8			
Surr: 2,4,6-Tribromophenol	3.8		8.000		48.0	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.7		4.000		43.5	15	84.5			
Surr: 4-Terphenyl-d14	4.1		4.000		103	73.1	152			

Sample ID: **lcs-62813** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **62813** RunNo: **81719**
Prep Date: **9/24/2021** Analysis Date: **9/30/2021** SeqNo: **2889278** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.86	0.10	2.000	0	43.0	15	79.8			
Naphthalene	1.3	0.10	2.000	0	64.0	26.5	90.9			
1-Methylnaphthalene	1.3	0.10	2.000	0	66.0	27.9	88.2			
2-Methylnaphthalene	1.3	0.10	2.000	0	65.0	29.2	87.5			
Acenaphthene	1.4	0.10	2.000	0	70.0	25.6	93.9			
Fluorene	1.5	0.10	2.000	0	73.0	27.4	95.1			
Phenanthrene	1.6	0.10	2.000	0	80.0	25.1	104			
Anthracene	1.6	0.10	2.000	0	81.0	30.1	100			
Pyrene	1.7	0.20	2.000	0	84.0	34.5	112			
Benz(a)anthracene	1.9	0.10	2.000	0	95.0	43.9	132			
Chrysene	1.6	0.10	2.000	0	79.0	39.8	118			
Surr: Nitrobenzene-d5	4.3		5.000		86.0	21.9	89.8			
Surr: 2,4,6-Tribromophenol	7.1		10.00		71.0	23.4	71.6			
Surr: 2-Fluorobiphenyl	3.7		5.000		74.8	15	84.5			
Surr: 4-Terphenyl-d14	5.6		5.000		113	73.1	152			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **lcsd-62813** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **62813** RunNo: **81719**
Prep Date: **9/24/2021** Analysis Date: **9/30/2021** SeqNo: **2889279** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.88	0.10	2.000	0	44.0	15	79.8	2.30	34.2	
Naphthalene	1.4	0.10	2.000	0	68.0	26.5	90.9	6.06	37.6	
1-Methylnaphthalene	1.4	0.10	2.000	0	69.0	27.9	88.2	4.44	33.1	
2-Methylnaphthalene	1.4	0.10	2.000	0	68.0	29.2	87.5	4.51	35.4	
Acenaphthene	1.5	0.10	2.000	0	74.0	25.6	93.9	5.56	36.3	
Fluorene	1.5	0.10	2.000	0	75.0	27.4	95.1	2.70	32.2	
Phenanthrene	1.6	0.10	2.000	0	82.0	25.1	104	2.47	32.9	
Anthracene	1.7	0.10	2.000	0	83.0	30.1	100	2.44	31.5	
Pyrene	1.7	0.20	2.000	0	83.0	34.5	112	1.20	23.3	
Benz(a)anthracene	1.8	0.10	2.000	0	89.0	43.9	132	6.52	29.5	
Chrysene	1.7	0.10	2.000	0	84.0	39.8	118	6.13	22.3	
Surr: Nitrobenzene-d5	4.3		5.000		86.8	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	7.0		10.00		70.4	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	3.7		5.000		74.4	15	84.5	0	0	
Surr: 4-Terphenyl-d14	5.7		5.000		114	73.1	152	0	0	

Sample ID: **mb-62858** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **62858** RunNo: **81719**
Prep Date: **9/27/2021** Analysis Date: **10/1/2021** SeqNo: **2889300** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	2.3		4.000		58.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	4.4		8.000		54.8	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.8		4.000		45.5	15	84.5			
Surr: 4-Terphenyl-d14	3.6		4.000		90.0	73.1	152			

Sample ID: **lcs-62858** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **62858** RunNo: **81719**
Prep Date: **9/27/2021** Analysis Date: **10/1/2021** SeqNo: **2889301** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.2		5.000		64.4	21.9	89.8			
Surr: 2,4,6-Tribromophenol	5.5		10.00		55.0	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.4		5.000		48.4	15	84.5			
Surr: 4-Terphenyl-d14	4.9		5.000		97.2	73.1	152			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **lcsd-62858** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **62858** RunNo: **81719**
Prep Date: **9/27/2021** Analysis Date: **10/1/2021** SeqNo: **2889302** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.4		5.000		68.0	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	5.7		10.00		57.4	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	2.4		5.000		48.8	15	84.5	0	0	
Surr: 4-Terphenyl-d14	4.9		5.000		98.4	73.1	152	0	0	

Sample ID: **mb-62980** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **62980** RunNo: **81884**
Prep Date: **10/1/2021** Analysis Date: **10/7/2021** SeqNo: **2897034** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	2.1		4.000		53.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	4.0		8.000		49.8	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.5		4.000		38.0	15	84.5			
Surr: 4-Terphenyl-d14	3.1		4.000		77.0	73.1	152			

Sample ID: **lcs-62980** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **62980** RunNo: **81884**
Prep Date: **10/1/2021** Analysis Date: **10/7/2021** SeqNo: **2897035** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.9		5.000		78.0	21.9	89.8			
Surr: 2,4,6-Tribromophenol	6.6		10.00		65.6	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.8		5.000		56.4	15	84.5			
Surr: 4-Terphenyl-d14	5.2		5.000		103	73.1	152			

Sample ID: **lcsd-62980** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **62980** RunNo: **81884**
Prep Date: **10/1/2021** Analysis Date: **10/7/2021** SeqNo: **2897036** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.0		5.000		60.0	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	5.8		10.00		58.2	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	2.1		5.000		42.8	15	84.5	0	0	
Surr: 4-Terphenyl-d14	5.1		5.000		102	73.1	152	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G81591** RunNo: **81591**
Prep Date: Analysis Date: **9/24/2021** SeqNo: **2883330** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.42	0.050	0.5000	0	83.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G81591** RunNo: **81591**
Prep Date: Analysis Date: **9/24/2021** SeqNo: **2883339** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G81622** RunNo: **81622**
Prep Date: Analysis Date: **9/27/2021** SeqNo: **2884522** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.3	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G81622** RunNo: **81622**
Prep Date: Analysis Date: **9/27/2021** SeqNo: **2884537** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G81662** RunNo: **81662**
Prep Date: Analysis Date: **9/28/2021** SeqNo: **2886478** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	104	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.9	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G81662** RunNo: **81662**
Prep Date: Analysis Date: **9/28/2021** SeqNo: **2886495** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B85**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G81662**	RunNo: **81662**
Prep Date:	Analysis Date: **9/28/2021**	SeqNo: **2886495** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		112	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2109B85** RcptNo: 1

Received By: **Kasandra Payan** **9/21/2021 4:30:00 PM** KP

Completed By: **Desiree Dominguez** **9/22/2021 9:45:47 AM** DD

Reviewed By: JN 9/22/21

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐ SPA 9.22.21
8. Was preservative added to bottles? Yes ☑ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 27 (<2 or >12 unless noted)
Adjusted? YES
Checked by: SPA 9.22.21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks: ADDED 0.5 ml HNO_3 to 0.05F for pH<2, metals Analysis. SPA 9.22.21

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	8.8	Good	Yes			
2	13.4	Good	Yes			
3	9.9	Good	Yes			

Released to Imaging: 11/2/2022 10:23:25 AM

Received by OCD: 3/25/2022 3:35:30 PM

Chain of Custody Record

Client: Marathon Petroleum Company	☒ Standard ☐ Rush
	Project Name: 2021 GW Sampling - 3rd Quarter
Mailing Address: 92 Giant Crossing Rd. Jamestown, NM 87347	Project #: 697-080-001
Phone #: 808-640-1823	PO#: 4500267009
Email or Fax#: bmcloughlin@trihydro.com	Project Manager: Lesli Alexander, Brian McLoughlin
QA/QC Package: Standard ☐ Level 4 (Full Validation)	Sampler:
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	On Ice: ☑ Yes ☐ No
EDD (Type)	# of Coolers: 3
	Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2109B85	VOCs	TPH GRO	TPH DRO/MRO	SVOC includes 1,4 Dioxane on reques	1,4 Dioxane	WQCC metals	C/A	NO2/NO3 combined	Nitrite	8011 EDB	8260/BTEX/MTBE	COD	Cyanide	TDS/TSS	Gen Chem	PFAS
9-21-21	8:15	water	EB-09-21-21	14		-001	X	X	X	X		X	X			X						
9-21-21	8:15	water	MKTF-40	14		-002	X	X	X	X		X	X			X						
9-21-21	9:15	water	MKTF-25	14		-003	X	X	X	X		X	X			X						
9-21-21	9:40	water	MKTF-24	14		-004	X	X	X	X		X	X			X						
9-21-21	10:15	water	OAPIS-1	14		-005	X	X	X	X		X	X			X						
9-21-21	10:35	water	NAPI-2	12		-006	X	X	X	X		X	X									
9-21-21	11:00	water	NAPI-3	14		-007	X	X	X	X		X	X			X						
9-21-21	11:15	water	KA-3	12		-008	X	X	X	X		X	X									
9-21-21	11:15	water	FB-09-21-21	2		-009	X															
9-21-21	—	water	DUP-09-21-21	13		-010	X	X	X	X		X	X			X						
		water	FB			-011										X	—	Only received 8011 VIALS				
		water																				

Date	Time	Relinquished by	Received by	Via	Date	Time
9-21-21	1:30			courier	9/21/21	6:30
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks: DUP-09-21-21 missing 1 amber due to breaking during shipping and packaging.

① 8.6+0.2=8.8°c
② 13.2+0.2=13.4°c
③ 9.7+0.2=9.9°c

TO 9.23.21

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

November 03, 2021

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL:
FAX

RE: 2021 GW Sampling 3rd Quarter OrderNo.: 2109C62

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 6 sample(s) on 9/22/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
Toluene	ND	0.20	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
Acetone	2.7	2.5	10	J	µg/L	1	9/27/2021 7:16:38 PM	R81622
Bromomethane	ND	0.85	3.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
2-Butanone	ND	2.0	10		µg/L	1	9/27/2021 7:16:38 PM	R81622
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
Chloroethane	ND	0.38	2.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
Chloroform	ND	0.13	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
Chloromethane	ND	0.41	3.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
2-Hexanone	ND	1.8	10		µg/L	1	9/27/2021 7:16:38 PM	R81622
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/27/2021 7:16:38 PM	R81622
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
Styrene	ND	0.14	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/27/2021 7:16:38 PM	R81622
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/27/2021 7:16:38 PM	R81622
Surr: 1,2-Dichloroethane-d4	117	0	70-130		%Rec	1	9/27/2021 7:16:38 PM	R81622
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	9/27/2021 7:16:38 PM	R81622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: Dibromofluoromethane	105	0	70-130		%Rec	1	9/27/2021 7:16:38 PM	R81622
Surr: Toluene-d8	104	0	70-130		%Rec	1	9/27/2021 7:16:38 PM	R81622
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/27/2021 7:16:38 PM	G81622
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	9/27/2021 7:16:38 PM	G81622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	ND	0.075	0.085		mg/L	1	9/28/2021 11:16:56 AM	62819
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	9/28/2021 11:16:56 AM	62819
Surr: DNOP	30.5	0	15-142		%Rec	1	9/28/2021 11:16:56 AM	62819

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/29/2021 11:30:19 PM	62838
Benzoic acid	ND	1.1	20		µg/L	1	9/29/2021 11:30:19 PM	62838
Benzyl alcohol	ND	0.68	5.0		µg/L	1	9/29/2021 11:30:19 PM	62838
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/29/2021 11:30:19 PM	62838
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/29/2021 11:30:19 PM	62838
Carbazole	ND	0.56	5.0		µg/L	1	9/29/2021 11:30:19 PM	62838
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/29/2021 11:30:19 PM	62838
Dibenzofuran	ND	0.38	5.0		µg/L	1	9/29/2021 11:30:19 PM	62838
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/29/2021 11:30:19 PM	62838
Diethyl phthalate	ND	3.9	10		µg/L	1	9/29/2021 11:30:19 PM	62838
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/29/2021 11:30:19 PM	62838
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	9/29/2021 11:30:19 PM	62838
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/29/2021 11:30:19 PM	62838
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/29/2021 11:30:19 PM	62838
Pentachlorophenol	ND	0.59	20		µg/L	1	9/29/2021 11:30:19 PM	62838
Phenol	ND	0.33	5.0		µg/L	1	9/29/2021 11:30:19 PM	62838
Pyridine	ND	0.93	5.0		µg/L	1	9/29/2021 11:30:19 PM	62838
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/29/2021 11:30:19 PM	62838
Surr: 2-Fluorophenol	50.5	0	15-87		%Rec	1	9/29/2021 11:30:19 PM	62838
Surr: Phenol-d5	36.4	0	15-67.5		%Rec	1	9/29/2021 11:30:19 PM	62838
Surr: 2,4,6-Tribromophenol	66.5	0	15-122		%Rec	1	9/29/2021 11:30:19 PM	62838
Surr: Nitrobenzene-d5	58.8	0	15-103		%Rec	1	9/29/2021 11:30:19 PM	62838
Surr: 2-Fluorobiphenyl	59.5	0	15-103		%Rec	1	9/29/2021 11:30:19 PM	62838
Surr: 4-Terphenyl-d14	96.4	0	45-137		%Rec	1	9/29/2021 11:30:19 PM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	9/30/2021 9:42:00 PM	62813
Naphthalene	ND	0.034	0.10		µg/L	1	9/30/2021 9:42:00 PM	62813
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	9/30/2021 9:42:00 PM	62813
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	9/30/2021 9:42:00 PM	62813
Acenaphthene	ND	0.031	0.10		µg/L	1	9/30/2021 9:42:00 PM	62813
Fluorene	ND	0.031	0.10		µg/L	1	9/30/2021 9:42:00 PM	62813
Phenanthrene	ND	0.057	0.10		µg/L	1	9/30/2021 9:42:00 PM	62813
Anthracene	ND	0.034	0.10		µg/L	1	9/30/2021 9:42:00 PM	62813
Pyrene	ND	0.16	0.20		µg/L	1	9/30/2021 9:42:00 PM	62813
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/30/2021 9:42:00 PM	62813
Chrysene	ND	0.024	0.10		µg/L	1	9/30/2021 9:42:00 PM	62813
Surr: Nitrobenzene-d5	55.0	0	21.9-89.8		%Rec	1	9/30/2021 9:42:00 PM	62813
Surr: 2-Fluorobiphenyl	45.0	0	15-84.5		%Rec	1	9/30/2021 9:42:00 PM	62813
Surr: 4-Terphenyl-d14	91.0	0	73.1-152		%Rec	1	9/30/2021 9:42:00 PM	62813

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.040	0.10		mg/L	1	9/23/2021 3:25:26 PM	R81536
Chloride	ND	0.25	0.50		mg/L	1	9/23/2021 3:25:26 PM	R81536
Nitrogen, Nitrite (As N)	ND	0.0053	0.10		mg/L	1	9/23/2021 3:25:26 PM	R81536
Nitrogen, Nitrate (As N)	0.070	0.010	0.10	J	mg/L	1	9/23/2021 3:25:26 PM	R81536
Sulfate	ND	0.25	0.50		mg/L	1	9/23/2021 3:25:26 PM	R81536

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-001F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	9/28/2021 2:29:51 PM	62798
Cadmium	ND	0.0015	0.0020		mg/L	1	9/28/2021 2:29:51 PM	62798
Chromium	ND	0.0021	0.0060		mg/L	1	9/28/2021 2:29:51 PM	62798
Iron	ND	0.013	0.050		mg/L	1	9/28/2021 2:29:51 PM	62798
Manganese	ND	0.00081	0.0020		mg/L	1	9/28/2021 2:29:51 PM	62798
Silver	ND	0.0013	0.0050		mg/L	1	9/28/2021 2:29:51 PM	62798
Zinc	ND	0.0064	0.010		mg/L	1	9/28/2021 2:29:51 PM	62798
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	ND	0.00013	0.0010		mg/L	1	9/30/2021 5:36:02 PM	62798
Copper	ND	0.00040	0.0010		mg/L	1	9/30/2021 5:36:02 PM	62798
Lead	ND	0.000061	0.00050		mg/L	1	9/30/2021 5:36:02 PM	62798
Selenium	ND	0.00037	0.0010		mg/L	1	9/30/2021 5:36:02 PM	62798
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 10:51:19 AM	63015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-001G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	9/29/2021 1:26:16 PM	C81654
Cadmium	ND	0.0012	0.0020		mg/L	1	9/29/2021 1:26:16 PM	C81654
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2021 1:26:16 PM	C81654
Iron	ND	0.010	0.020		mg/L	1	9/29/2021 1:26:16 PM	C81654
Manganese	ND	0.00058	0.0020		mg/L	1	9/29/2021 1:26:16 PM	C81654
Silver	ND	0.0013	0.0050		mg/L	1	9/29/2021 1:26:16 PM	C81654
Zinc	0.0090	0.0060	0.010	J	mg/L	1	9/29/2021 1:26:16 PM	C81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	ND	0.00012	0.0010		mg/L	1	10/4/2021 3:30:30 PM	C81765
Copper	ND	0.00037	0.0010		mg/L	1	10/4/2021 3:30:30 PM	C81765
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2021 3:30:30 PM	C81765
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2021 3:30:30 PM	C81765
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 10:53:42 AM	63015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.29	0.23	1.0	J	µg/L	1	9/27/2021 7:45:22 PM	R81622
Toluene	ND	0.20	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
Acetone	ND	2.5	10		µg/L	1	9/27/2021 7:45:22 PM	R81622
Bromomethane	ND	0.85	3.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
2-Butanone	ND	2.0	10		µg/L	1	9/27/2021 7:45:22 PM	R81622
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
Chloroethane	ND	0.38	2.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
Chloroform	0.21	0.13	1.0	J	µg/L	1	9/27/2021 7:45:22 PM	R81622
Chloromethane	ND	0.41	3.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
2-Hexanone	ND	1.8	10		µg/L	1	9/27/2021 7:45:22 PM	R81622
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/27/2021 7:45:22 PM	R81622
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
Styrene	ND	0.14	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/27/2021 7:45:22 PM	R81622
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/27/2021 7:45:22 PM	R81622
Surr: 1,2-Dichloroethane-d4	116	0	70-130		%Rec	1	9/27/2021 7:45:22 PM	R81622
Surr: 4-Bromofluorobenzene	97.7	0	70-130		%Rec	1	9/27/2021 7:45:22 PM	R81622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: Dibromofluoromethane	109	0	70-130		%Rec	1	9/27/2021 7:45:22 PM	R81622
Surr: Toluene-d8	107	0	70-130		%Rec	1	9/27/2021 7:45:22 PM	R81622
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/27/2021 7:45:22 PM	G81622
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	9/27/2021 7:45:22 PM	G81622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	ND	0.075	0.085		mg/L	1	9/28/2021 11:40:45 AM	62819
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	9/28/2021 11:40:45 AM	62819
Surr: DNOP	29.1	0	15-142		%Rec	1	9/28/2021 11:40:45 AM	62819

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/30/2021 12:11:53 AM	62838
Benzoic acid	ND	1.1	20		µg/L	1	9/30/2021 12:11:53 AM	62838
Benzyl alcohol	ND	0.68	5.0		µg/L	1	9/30/2021 12:11:53 AM	62838
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/30/2021 12:11:53 AM	62838
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/30/2021 12:11:53 AM	62838
Carbazole	ND	0.56	5.0		µg/L	1	9/30/2021 12:11:53 AM	62838
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/30/2021 12:11:53 AM	62838
Dibenzofuran	ND	0.38	5.0		µg/L	1	9/30/2021 12:11:53 AM	62838
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/30/2021 12:11:53 AM	62838
Diethyl phthalate	ND	3.9	10		µg/L	1	9/30/2021 12:11:53 AM	62838
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/30/2021 12:11:53 AM	62838
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	9/30/2021 12:11:53 AM	62838
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/30/2021 12:11:53 AM	62838
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/30/2021 12:11:53 AM	62838
Pentachlorophenol	ND	0.59	20		µg/L	1	9/30/2021 12:11:53 AM	62838
Phenol	ND	0.33	5.0		µg/L	1	9/30/2021 12:11:53 AM	62838
Pyridine	ND	0.93	5.0		µg/L	1	9/30/2021 12:11:53 AM	62838
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/30/2021 12:11:53 AM	62838
Surr: 2-Fluorophenol	44.9	0	15-87		%Rec	1	9/30/2021 12:11:53 AM	62838
Surr: Phenol-d5	34.4	0	15-67.5		%Rec	1	9/30/2021 12:11:53 AM	62838
Surr: 2,4,6-Tribromophenol	55.8	0	15-122		%Rec	1	9/30/2021 12:11:53 AM	62838
Surr: Nitrobenzene-d5	52.2	0	15-103		%Rec	1	9/30/2021 12:11:53 AM	62838
Surr: 2-Fluorobiphenyl	49.4	0	15-103		%Rec	1	9/30/2021 12:11:53 AM	62838
Surr: 4-Terphenyl-d14	79.9	0	45-137		%Rec	1	9/30/2021 12:11:53 AM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.48	0.048	1.0	J	µg/L	1	9/30/2021 10:26:00 PM	62813
Naphthalene	0.32	0.034	0.10		µg/L	1	9/30/2021 10:26:00 PM	62813
1-Methylnaphthalene	0.50	0.024	0.10		µg/L	1	9/30/2021 10:26:00 PM	62813
2-Methylnaphthalene	0.24	0.034	0.10		µg/L	1	9/30/2021 10:26:00 PM	62813
Acenaphthene	ND	0.031	0.10		µg/L	1	9/30/2021 10:26:00 PM	62813
Fluorene	ND	0.031	0.10		µg/L	1	9/30/2021 10:26:00 PM	62813
Phenanthrene	ND	0.057	0.10		µg/L	1	9/30/2021 10:26:00 PM	62813
Anthracene	ND	0.034	0.10		µg/L	1	9/30/2021 10:26:00 PM	62813
Pyrene	ND	0.16	0.20		µg/L	1	9/30/2021 10:26:00 PM	62813
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/30/2021 10:26:00 PM	62813
Chrysene	ND	0.024	0.10		µg/L	1	9/30/2021 10:26:00 PM	62813
Surr: Nitrobenzene-d5	58.0	0	21.9-89.8		%Rec	1	9/30/2021 10:26:00 PM	62813
Surr: 2-Fluorobiphenyl	51.5	0	15-84.5		%Rec	1	9/30/2021 10:26:00 PM	62813
Surr: 4-Terphenyl-d14	98.5	0	73.1-152		%Rec	1	9/30/2021 10:26:00 PM	62813

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-002E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.93	0.20	0.50		mg/L	5	9/23/2021 4:42:38 PM	R81536
Chloride	200	5.0	10		mg/L	20	9/23/2021 4:55:30 PM	R81536
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	9/23/2021 4:42:38 PM	R81536
Nitrogen, Nitrate (As N)	4.6	0.050	0.50		mg/L	5	9/23/2021 4:42:38 PM	R81536
Sulfate	510	5.0	10	*	mg/L	20	9/23/2021 4:55:30 PM	R81536

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-002F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.18	0.0016	0.0030		mg/L	1	9/28/2021 2:34:47 PM	62798
Cadmium	ND	0.0015	0.0020		mg/L	1	9/28/2021 2:34:47 PM	62798
Chromium	0.0022	0.0021	0.0060	J	mg/L	1	9/28/2021 2:34:47 PM	62798
Iron	2.9	0.13	0.50	*	mg/L	10	9/28/2021 2:36:10 PM	62798
Manganese	0.60	0.00081	0.0020	*	mg/L	1	9/28/2021 2:34:47 PM	62798
Silver	ND	0.0013	0.0050		mg/L	1	9/28/2021 2:34:47 PM	62798
Zinc	0.0069	0.0064	0.010	J	mg/L	1	9/28/2021 2:34:47 PM	62798
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0011	0.00013	0.0010		mg/L	1	9/30/2021 5:38:28 PM	62798
Copper	0.0027	0.00040	0.0010		mg/L	1	9/30/2021 5:38:28 PM	62798
Lead	0.0025	0.000061	0.00050		mg/L	1	9/30/2021 5:38:28 PM	62798
Selenium	0.0032	0.00037	0.0010		mg/L	1	9/30/2021 5:38:28 PM	62798
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 10:56:04 AM	63015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:00:00 AM
Lab ID: 2109C62-002G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.025	0.0011	0.0020		mg/L	1	9/29/2021 1:35:41 PM	C81654
Cadmium	ND	0.0012	0.0020		mg/L	1	9/29/2021 1:35:41 PM	C81654
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2021 1:35:41 PM	C81654
Iron	ND	0.010	0.020		mg/L	1	9/29/2021 1:35:41 PM	C81654
Manganese	0.21	0.00058	0.0020	*	mg/L	1	9/29/2021 1:35:41 PM	C81654
Silver	ND	0.0013	0.0050		mg/L	1	9/29/2021 1:35:41 PM	C81654
Zinc	0.0080	0.0060	0.010	J	mg/L	1	9/29/2021 1:35:41 PM	C81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00061	0.00012	0.0010	J	mg/L	1	10/4/2021 3:46:04 PM	C81765
Copper	0.00098	0.00037	0.0010	J	mg/L	1	10/5/2021 2:13:38 PM	B81815
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2021 3:46:04 PM	C81765
Selenium	0.0029	0.00034	0.0010		mg/L	1	10/4/2021 3:46:04 PM	C81765
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 10:58:26 AM	63015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:30:00 AM
Lab ID: 2109C62-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/27/2021 8:13:58 PM	R81622
Toluene	ND	0.20	1.0		µg/L	1	9/27/2021 8:13:58 PM	R81622
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/27/2021 8:13:58 PM	R81622
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/27/2021 8:13:58 PM	R81622
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/27/2021 8:13:58 PM	R81622
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 8:13:58 PM	R81622
Acetone	2.8	2.5	10	J	µg/L	1	9/27/2021 8:13:58 PM	R81622
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 8:13:58 PM	R81622
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/27/2021 8:13:58 PM	R81622
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 8:13:58 PM	R81622
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/27/2021 8:13:58 PM	R81622
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/27/2021 8:13:58 PM	R81622
Surr: 1,2-Dichloroethane-d4	116	0	70-130		%Rec	1	9/27/2021 8:13:58 PM	R81622
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	9/27/2021 8:13:58 PM	R81622
Surr: Dibromofluoromethane	109	0	70-130		%Rec	1	9/27/2021 8:13:58 PM	R81622
Surr: Toluene-d8	109	0	70-130		%Rec	1	9/27/2021 8:13:58 PM	R81622
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/27/2021 8:13:58 PM	G81622
Surr: 4-Bromofluorobenzene	110	0	70-130		%Rec	1	9/27/2021 8:13:58 PM	G81622

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:30:00 AM
Lab ID: 2109C62-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.14	0.075	0.085		mg/L	1	9/28/2021 12:04:40 PM	62819
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	9/28/2021 12:04:40 PM	62819
Surr: DNOP	28.7	0	15-142		%Rec	1	9/28/2021 12:04:40 PM	62819

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Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:30:00 AM
Lab ID: 2109C62-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20	D	µg/L	1	9/30/2021 1:44:52 AM	62838
Bis(2-ethylhexyl)phthalate	ND	4.6	10	D	µg/L	1	9/30/2021 1:44:52 AM	62838
Phenol	ND	0.33	5.1	D	µg/L	1	9/30/2021 1:44:52 AM	62838
Surr: 2-Fluorophenol	2.30	0	15-87	SD	%Rec	1	9/30/2021 1:44:52 AM	62838
Surr: Phenol-d5	11.2	0	15-67.5	SD	%Rec	1	9/30/2021 1:44:52 AM	62838
Surr: 2,4,6-Tribromophenol	3.50	0	15-122	SD	%Rec	1	9/30/2021 1:44:52 AM	62838
Surr: Nitrobenzene-d5	45.9	0	15-103	D	%Rec	1	9/30/2021 1:44:52 AM	62838
Surr: 2-Fluorobiphenyl	47.2	0	15-103	D	%Rec	1	9/30/2021 1:44:52 AM	62838
Surr: 4-Terphenyl-d14	80.1	0	45-137	D	%Rec	1	9/30/2021 1:44:52 AM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	10/1/2021 12:07:00 AM	62813
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	10/1/2021 12:07:00 AM	62813
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	10/1/2021 12:07:00 AM	62813
Surr: Nitrobenzene-d5	54.5	0	21.9-89.8		%Rec	1	10/1/2021 12:07:00 AM	62813
Surr: 2-Fluorobiphenyl	48.0	0	15-84.5		%Rec	1	10/1/2021 12:07:00 AM	62813
Surr: 4-Terphenyl-d14	95.5	0	73.1-152		%Rec	1	10/1/2021 12:07:00 AM	62813

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Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:30:00 AM
Lab ID: 2109C62-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.20	0.50		mg/L	5	9/23/2021 5:08:23 PM	R81536
Chloride	2100	50	100	*	mg/L	200	9/28/2021 3:05:13 PM	R81637
Nitrogen, Nitrite (As N)	ND	0.11	2.0		mg/L	20	9/23/2021 5:21:15 PM	R81536
Nitrogen, Nitrate (As N)	25	0.050	0.50	*	mg/L	5	9/23/2021 5:08:23 PM	R81536
Sulfate	180	1.2	2.5		mg/L	5	9/23/2021 5:08:23 PM	R81536

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Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:30:00 AM
Lab ID: 2109C62-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.086	0.0016	0.0030		mg/L	1	9/28/2021 2:39:28 PM	62798
Cadmium	ND	0.0015	0.0020		mg/L	1	9/28/2021 2:39:28 PM	62798
Chromium	ND	0.0021	0.0060		mg/L	1	9/28/2021 2:39:28 PM	62798
Iron	0.13	0.013	0.050		mg/L	1	9/28/2021 2:39:28 PM	62798
Manganese	0.0022	0.00081	0.0020		mg/L	1	9/28/2021 2:39:28 PM	62798
Silver	ND	0.0013	0.0050		mg/L	1	9/28/2021 2:39:28 PM	62798
Zinc	ND	0.0064	0.010		mg/L	1	9/28/2021 2:39:28 PM	62798
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0025	0.00013	0.0010		mg/L	1	9/30/2021 5:40:53 PM	62798
Copper	ND	0.00040	0.0010		mg/L	1	9/30/2021 5:40:53 PM	62798
Lead	0.000089	0.000061	0.00050	J	mg/L	1	9/30/2021 5:40:53 PM	62798
Selenium	0.0063	0.00037	0.0010		mg/L	1	9/30/2021 5:40:53 PM	62798
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 11:05:31 AM	63015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:30:00 AM
Lab ID: 2109C62-003G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.083	0.0011	0.0020		mg/L	1	9/29/2021 1:38:55 PM	C81654
Cadmium	ND	0.0012	0.0020		mg/L	1	9/29/2021 1:38:55 PM	C81654
Chromium	ND	0.0020	0.0060		mg/L	1	9/29/2021 1:38:55 PM	C81654
Iron	0.027	0.010	0.020		mg/L	1	9/29/2021 1:38:55 PM	C81654
Manganese	0.00077	0.00058	0.0020	J	mg/L	1	9/29/2021 1:38:55 PM	C81654
Silver	ND	0.0013	0.0050		mg/L	1	9/29/2021 1:38:55 PM	C81654
Zinc	0.013	0.0060	0.010		mg/L	1	9/29/2021 1:38:55 PM	C81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0027	0.00012	0.0010		mg/L	1	10/4/2021 3:50:48 PM	C81765
Copper	ND	0.00037	0.0010		mg/L	1	10/4/2021 3:50:48 PM	C81765
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2021 3:50:48 PM	C81765
Selenium	0.0081	0.00034	0.0010		mg/L	1	10/4/2021 3:50:48 PM	C81765

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:50:00 AM
Lab ID: 2109C62-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/27/2021 9:39:47 PM	R81622
Toluene	ND	0.20	1.0		µg/L	1	9/27/2021 9:39:47 PM	R81622
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/27/2021 9:39:47 PM	R81622
Methyl tert-butyl ether (MTBE)	15	0.39	1.0		µg/L	1	9/27/2021 9:39:47 PM	R81622
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/27/2021 9:39:47 PM	R81622
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 9:39:47 PM	R81622
Acetone	2.9	2.5	10	J	µg/L	1	9/27/2021 9:39:47 PM	R81622
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 9:39:47 PM	R81622
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/27/2021 9:39:47 PM	R81622
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 9:39:47 PM	R81622
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/27/2021 9:39:47 PM	R81622
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/27/2021 9:39:47 PM	R81622
Surr: 1,2-Dichloroethane-d4	116	0	70-130		%Rec	1	9/27/2021 9:39:47 PM	R81622
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/27/2021 9:39:47 PM	R81622
Surr: Dibromofluoromethane	109	0	70-130		%Rec	1	9/27/2021 9:39:47 PM	R81622
Surr: Toluene-d8	102	0	70-130		%Rec	1	9/27/2021 9:39:47 PM	R81622
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	2.7	0.012	0.050		mg/L	1	9/27/2021 9:39:47 PM	G81622
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	9/27/2021 9:39:47 PM	G81622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:50:00 AM
Lab ID: 2109C62-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.36	0.075	0.085		mg/L	1	10/1/2021 10:08:20 AM	62868
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	10/1/2021 10:08:20 AM	62868
Surr: DNOP	25.1	0	15-142		%Rec	1	10/1/2021 10:08:20 AM	62868

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:50:00 AM
Lab ID: 2109C62-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.2	23	D	µg/L	1	9/30/2021 2:26:28 AM	62838
Bis(2-ethylhexyl)phthalate	ND	5.1	11	D	µg/L	1	9/30/2021 2:26:28 AM	62838
Phenol	ND	0.37	5.7	D	µg/L	1	9/30/2021 2:26:28 AM	62838
Surr: 2-Fluorophenol	0.842	0	15-87	SD	%Rec	1	9/30/2021 2:26:28 AM	62838
Surr: Phenol-d5	1.92	0	15-67.5	SD	%Rec	1	9/30/2021 2:26:28 AM	62838
Surr: 2,4,6-Tribromophenol	2.74	0	15-122	SD	%Rec	1	9/30/2021 2:26:28 AM	62838
Surr: Nitrobenzene-d5	59.1	0	15-103	D	%Rec	1	9/30/2021 2:26:28 AM	62838
Surr: 2-Fluorobiphenyl	59.0	0	15-103	D	%Rec	1	9/30/2021 2:26:28 AM	62838
Surr: 4-Terphenyl-d14	74.5	0	45-137	D	%Rec	1	9/30/2021 2:26:28 AM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	10/1/2021 12:50:00 AM	62813
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	10/1/2021 12:50:00 AM	62813
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	10/1/2021 12:50:00 AM	62813
Surr: Nitrobenzene-d5	154	0	21.9-89.8	S	%Rec	1	10/1/2021 12:50:00 AM	62813
Surr: 2-Fluorobiphenyl	120	0	15-84.5	S	%Rec	1	10/1/2021 12:50:00 AM	62813
Surr: 4-Terphenyl-d14	254	0	73.1-152	S	%Rec	1	10/1/2021 12:50:00 AM	62813

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:50:00 AM
Lab ID: 2109C62-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.20	0.50		mg/L	5	9/23/2021 5:34:07 PM	R81536
Chloride	2400	50	100	*	mg/L	200	9/28/2021 3:18:06 PM	R81637
Nitrogen, Nitrite (As N)	ND	0.11	2.0		mg/L	20	9/23/2021 5:47:01 PM	R81536
Nitrogen, Nitrate (As N)	0.20	0.050	0.50	J	mg/L	5	9/23/2021 5:34:07 PM	R81536
Sulfate	2500	50	100	*	mg/L	200	9/28/2021 3:18:06 PM	R81637

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:50:00 AM
Lab ID: 2109C62-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.11	0.0016	0.0030		mg/L	1	9/28/2021 2:48:04 PM	62798
Cadmium	ND	0.0015	0.0020		mg/L	1	9/28/2021 2:48:04 PM	62798
Chromium	ND	0.0021	0.0060		mg/L	1	9/28/2021 2:48:04 PM	62798
Iron	3.6	0.13	0.50	*	mg/L	10	9/28/2021 2:49:27 PM	62798
Manganese	0.14	0.00081	0.0020	*	mg/L	1	9/28/2021 2:48:04 PM	62798
Silver	ND	0.0013	0.0050		mg/L	1	9/28/2021 2:48:04 PM	62798
Zinc	0.0072	0.0064	0.010	J	mg/L	1	9/28/2021 2:48:04 PM	62798
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0054	0.00063	0.0050		mg/L	5	10/6/2021 4:23:33 PM	62798
Copper	0.0033	0.00040	0.0010		mg/L	1	9/30/2021 5:43:18 PM	62798
Lead	0.0021	0.00031	0.0025	J	mg/L	5	10/6/2021 4:23:33 PM	62798
Selenium	0.0028	0.0019	0.0050	J	mg/L	5	10/6/2021 4:23:33 PM	62798
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 11:07:54 AM	63015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-59
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:50:00 AM
Lab ID: 2109C62-004G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.011	0.0056	0.010		mg/L	5	9/29/2021 1:55:07 PM	C81654
Cadmium	ND	0.0060	0.010		mg/L	5	9/29/2021 1:55:07 PM	C81654
Chromium	ND	0.0098	0.030		mg/L	5	9/29/2021 1:55:07 PM	C81654
Iron	0.046	0.010	0.020		mg/L	1	9/29/2021 1:42:07 PM	C81654
Manganese	0.045	0.0029	0.010		mg/L	5	9/29/2021 1:55:07 PM	C81654
Silver	ND	0.0063	0.025		mg/L	5	9/29/2021 1:55:07 PM	C81654
Zinc	ND	0.030	0.050		mg/L	5	9/29/2021 1:55:07 PM	C81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0040	0.00061	0.0050	J	mg/L	5	10/5/2021 2:16:17 PM	B81815
Copper	ND	0.0018	0.0050		mg/L	5	10/5/2021 2:16:17 PM	B81815
Lead	ND	0.00028	0.0025		mg/L	5	10/5/2021 2:16:17 PM	B81815
Selenium	0.0024	0.0017	0.0050	J	mg/L	5	10/5/2021 2:16:17 PM	B81815

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:50:00 AM
Lab ID: 2109C62-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
Toluene	ND	0.20	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
Acetone	4.6	2.5	10	J	µg/L	1	9/27/2021 11:05:33 PM	R81622
Bromomethane	ND	0.85	3.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
2-Butanone	ND	2.0	10		µg/L	1	9/27/2021 11:05:33 PM	R81622
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
Chloroethane	ND	0.38	2.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
Chloroform	ND	0.13	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
Chloromethane	ND	0.41	3.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
2-Hexanone	ND	1.8	10		µg/L	1	9/27/2021 11:05:33 PM	R81622
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/27/2021 11:05:33 PM	R81622
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
Styrene	ND	0.14	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/27/2021 11:05:33 PM	R81622
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/27/2021 11:05:33 PM	R81622
Surr: 1,2-Dichloroethane-d4	124	0	70-130		%Rec	1	9/27/2021 11:05:33 PM	R81622
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/27/2021 11:05:33 PM	R81622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021 9:50:00 AM
Lab ID: 2109C62-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: Dibromofluoromethane	113	0	70-130		%Rec	1	9/27/2021 11:05:33 PM	R81622
Surr: Toluene-d8	104	0	70-130		%Rec	1	9/27/2021 11:05:33 PM	R81622
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/27/2021 11:05:33 PM	G81622
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	9/27/2021 11:05:33 PM	G81622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021
Lab ID: 2109C62-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/27/2021 11:34:15 PM	R81622
Toluene	ND	0.20	1.0		µg/L	1	9/27/2021 11:34:15 PM	R81622
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/27/2021 11:34:15 PM	R81622
Methyl tert-butyl ether (MTBE)	15	0.39	1.0		µg/L	1	9/27/2021 11:34:15 PM	R81622
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/27/2021 11:34:15 PM	R81622
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 11:34:15 PM	R81622
Acetone	3.3	2.5	10	J	µg/L	1	9/27/2021 11:34:15 PM	R81622
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 11:34:15 PM	R81622
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/27/2021 11:34:15 PM	R81622
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/27/2021 11:34:15 PM	R81622
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/27/2021 11:34:15 PM	R81622
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/27/2021 11:34:15 PM	R81622
Surr: 1,2-Dichloroethane-d4	119	0	70-130		%Rec	1	9/27/2021 11:34:15 PM	R81622
Surr: 4-Bromofluorobenzene	99.4	0	70-130		%Rec	1	9/27/2021 11:34:15 PM	R81622
Surr: Dibromofluoromethane	113	0	70-130		%Rec	1	9/27/2021 11:34:15 PM	R81622
Surr: Toluene-d8	99.7	0	70-130		%Rec	1	9/27/2021 11:34:15 PM	R81622
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	2.7	0.012	0.050		mg/L	1	9/27/2021 11:34:15 PM	G81622
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	9/27/2021 11:34:15 PM	G81622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021
Lab ID: 2109C62-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.32	0.075	0.085		mg/L	1	10/1/2021 10:31:48 AM	62868
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	10/1/2021 10:31:48 AM	62868
Surr: DNOP	24.3	0	15-142		%Rec	1	10/1/2021 10:31:48 AM	62868

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021
Lab ID: 2109C62-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.4	26	D	µg/L	1	9/30/2021 3:08:09 AM	62838
Bis(2-ethylhexyl)phthalate	ND	5.9	13	D	µg/L	1	9/30/2021 3:08:09 AM	62838
Phenol	ND	0.43	6.6	D	µg/L	1	9/30/2021 3:08:09 AM	62838
Surr: 2-Fluorophenol	1.54	0	15-87	SD	%Rec	1	9/30/2021 3:08:09 AM	62838
Surr: Phenol-d5	6.08	0	15-67.5	SD	%Rec	1	9/30/2021 3:08:09 AM	62838
Surr: 2,4,6-Tribromophenol	3.21	0	15-122	SD	%Rec	1	9/30/2021 3:08:09 AM	62838
Surr: Nitrobenzene-d5	59.1	0	15-103	D	%Rec	1	9/30/2021 3:08:09 AM	62838
Surr: 2-Fluorobiphenyl	58.8	0	15-103	D	%Rec	1	9/30/2021 3:08:09 AM	62838
Surr: 4-Terphenyl-d14	74.7	0	45-137	D	%Rec	1	9/30/2021 3:08:09 AM	62838
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	10/1/2021 1:34:00 AM	62813
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	10/1/2021 1:34:00 AM	62813
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	10/1/2021 1:34:00 AM	62813
Surr: Nitrobenzene-d5	68.0	0	21.9-89.8		%Rec	1	10/1/2021 1:34:00 AM	62813
Surr: 2-Fluorobiphenyl	51.5	0	15-84.5		%Rec	1	10/1/2021 1:34:00 AM	62813
Surr: 4-Terphenyl-d14	101	0	73.1-152		%Rec	1	10/1/2021 1:34:00 AM	62813

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021
Lab ID: 2109C62-006E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.20	0.50		mg/L	5	9/23/2021 5:59:52 PM	R81536
Chloride	2400	50	100	*	mg/L	200	9/28/2021 3:30:59 PM	R81637
Nitrogen, Nitrite (As N)	ND	0.11	2.0		mg/L	20	9/23/2021 6:12:43 PM	R81536
Nitrogen, Nitrate (As N)	ND	0.050	0.50		mg/L	5	9/23/2021 5:59:52 PM	R81536
Sulfate	2500	50	100	*	mg/L	200	9/28/2021 3:30:59 PM	R81637

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021
Lab ID: 2109C62-006F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.016	0.0082	0.015		mg/L	5	9/28/2021 2:56:07 PM	62798
Cadmium	ND	0.0074	0.010		mg/L	5	9/28/2021 2:56:07 PM	62798
Chromium	ND	0.011	0.030		mg/L	5	9/28/2021 2:56:07 PM	62798
Iron	0.42	0.064	0.25	*	mg/L	5	9/28/2021 2:56:07 PM	62798
Manganese	0.054	0.0041	0.010	*	mg/L	5	9/28/2021 2:56:07 PM	62798
Silver	ND	0.0063	0.025		mg/L	5	9/28/2021 2:56:07 PM	62798
Zinc	ND	0.032	0.050		mg/L	5	9/28/2021 2:56:07 PM	62798
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0043	0.00063	0.0050	J	mg/L	5	10/6/2021 4:25:59 PM	62798
Copper	0.0012	0.00040	0.0010		mg/L	1	9/30/2021 5:45:42 PM	62798
Lead	ND	0.00031	0.0025		mg/L	5	10/6/2021 4:25:59 PM	62798
Selenium	ND	0.0019	0.0050		mg/L	5	10/6/2021 4:25:59 PM	62798
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 11:10:17 AM	63015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109C62**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-22-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/22/2021
Lab ID: 2109C62-006G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.011	0.0056	0.010		mg/L	5	9/29/2021 1:56:48 PM	C81654
Chromium	ND	0.0098	0.030		mg/L	5	9/29/2021 1:56:48 PM	C81654
Iron	0.016	0.010	0.020	J	mg/L	1	9/29/2021 1:45:22 PM	C81654
Manganese	0.045	0.0029	0.010		mg/L	5	9/29/2021 1:56:48 PM	C81654
Silver	ND	0.0063	0.025		mg/L	5	9/29/2021 1:56:48 PM	C81654
Zinc	ND	0.030	0.050		mg/L	5	9/29/2021 1:56:48 PM	C81654
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0045	0.00012	0.0010		mg/L	1	10/4/2021 4:16:16 PM	D81765
Copper	0.0011	0.00037	0.0010		mg/L	1	10/5/2021 2:18:57 PM	B81815
Lead	ND	0.00028	0.0025		mg/L	5	10/5/2021 2:21:36 PM	B81815
Selenium	0.0027	0.00034	0.0010		mg/L	1	10/5/2021 2:18:57 PM	B81815
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 11:12:41 AM	63015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62798** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **62798** RunNo: **81569**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2882436** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS-62798** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **62798** RunNo: **81569**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2882441** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.0020	0.0020	0.002000	0	98.3	50	150			J
Chromium	0.0068	0.0060	0.006000	0	113	50	150			
Iron	0.028	0.050	0.02000	0	141	50	150			J
Manganese	0.0021	0.0020	0.002000	0	103	50	150			
Silver	0.0049	0.0050	0.005000	0	98.6	50	150			J
Zinc	0.011	0.010	0.01000	0	107	50	150			

Sample ID: **LCS-62798** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **62798** RunNo: **81569**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2882443** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	101	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.0	85	115			
Chromium	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.52	0.050	0.5000	0	104	85	115			
Manganese	0.48	0.0020	0.5000	0	96.3	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Zinc	0.49	0.010	0.5000	0	97.3	85	115			

Sample ID: **LLLCS-62798** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **62798** RunNo: **81569**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2882453** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0037	0.0030	0.002000	0	183	50	150			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62798** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **62798** RunNo: **81624**
Prep Date: **9/23/2021** Analysis Date: **9/28/2021** SeqNo: **2884556** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								

Sample ID: **LLLCS-62798** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **62798** RunNo: **81624**
Prep Date: **9/23/2021** Analysis Date: **9/28/2021** SeqNo: **2884558** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0025	0.0030	0.002000	0	125	50	150			J

Sample ID: **LCS-62798** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **62798** RunNo: **81624**
Prep Date: **9/23/2021** Analysis Date: **9/28/2021** SeqNo: **2884560** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	98.8	85	115			

Sample ID: **2109C62-001FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-09-22-21** Batch ID: **62798** RunNo: **81624**
Prep Date: **9/23/2021** Analysis Date: **9/28/2021** SeqNo: **2885007** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0030	0.5000	0	102	70	130			
Cadmium	0.52	0.0020	0.5000	0	103	70	130			
Chromium	0.51	0.0060	0.5000	0	101	70	130			
Iron	0.52	0.050	0.5000	0	103	70	130			
Manganese	0.51	0.0020	0.5000	0	102	70	130			
Silver	0.10	0.0050	0.1000	0	100	70	130			
Zinc	0.54	0.010	0.5000	0	108	70	130			

Sample ID: **2109C62-001FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-09-22-21** Batch ID: **62798** RunNo: **81624**
Prep Date: **9/23/2021** Analysis Date: **9/28/2021** SeqNo: **2885008** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0030	0.5000	0	105	70	130	2.58	20	
Cadmium	0.53	0.0020	0.5000	0	106	70	130	2.59	20	
Chromium	0.52	0.0060	0.5000	0	104	70	130	2.64	20	
Iron	0.51	0.050	0.5000	0	102	70	130	1.47	20	
Manganese	0.52	0.0020	0.5000	0	104	70	130	2.41	20	
Silver	0.10	0.0050	0.1000	0	103	70	130	3.26	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2109C62-001FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-09-22-21** Batch ID: **62798** RunNo: **81624**
Prep Date: **9/23/2021** Analysis Date: **9/28/2021** SeqNo: **2885008** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.55	0.010	0.5000	0	111	70	130	2.57	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C81654**	RunNo: **81654**
Prep Date:	Analysis Date: **9/29/2021**	SeqNo: **2886859** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C81654**	RunNo: **81654**
Prep Date:	Analysis Date: **9/29/2021**	SeqNo: **2886860** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0020	0.002000	0	98.2	50	150			J
Cadmium	0.0017	0.0020	0.002000	0	84.1	50	150			J
Chromium	0.0062	0.0060	0.006000	0	104	50	150			
Iron	0.021	0.020	0.02000	0	105	50	150			
Manganese	0.0021	0.0020	0.002000	0	105	50	150			
Silver	0.0049	0.0050	0.005000	0	98.9	50	150			J
Zinc	0.012	0.010	0.01000	0	122	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C81654**	RunNo: **81654**
Prep Date:	Analysis Date: **9/29/2021**	SeqNo: **2886861** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.1	85	115			
Chromium	0.50	0.0060	0.5000	0	99.7	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.48	0.0020	0.5000	0	97.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	95.9	85	115			

Sample ID: **2109C62-001GMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-09-22-21**	Batch ID: **C81654**	RunNo: **81654**
Prep Date:	Analysis Date: **9/29/2021**	SeqNo: **2886927** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2109C62-001GMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-09-22-21** Batch ID: **C81654** RunNo: **81654**
Prep Date: Analysis Date: **9/29/2021** SeqNo: **2886927** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.51	0.0020	0.5000	0	103	70	130			
Chromium	0.50	0.0060	0.5000	0	101	70	130			
Iron	0.50	0.020	0.5000	0	100	70	130			
Manganese	0.50	0.0020	0.5000	0	99.8	70	130			
Silver	0.10	0.0050	0.1000	0	103	70	130			
Zinc	0.53	0.010	0.5000	0.008953	105	70	130			

Sample ID: **2109C62-001GMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-09-22-21** Batch ID: **C81654** RunNo: **81654**
Prep Date: Analysis Date: **9/29/2021** SeqNo: **2886931** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	70	130	2.61	20	
Cadmium	0.50	0.0020	0.5000	0	100	70	130	2.31	20	
Chromium	0.49	0.0060	0.5000	0	98.3	70	130	2.21	20	
Iron	0.49	0.020	0.5000	0	99.0	70	130	1.31	20	
Manganese	0.48	0.0020	0.5000	0	96.7	70	130	3.10	20	
Silver	0.10	0.0050	0.1000	0	99.9	70	130	2.87	20	
Zinc	0.52	0.010	0.5000	0.008953	103	70	130	1.89	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62798** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **62798** RunNo: **81552**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2881786** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	0.00046	0.0010								J
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLLLCS-62798** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **62798** RunNo: **81552**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2881787** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Copper	0.0011	0.0010	0.001000	0	111	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.00085	0.0010	0.001000	0	84.6	50	150			J

Sample ID: **MSLCS-62798** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **62798** RunNo: **81552**
Prep Date: **9/23/2021** Analysis Date: **9/24/2021** SeqNo: **2881788** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	99.9	85	115			
Copper	0.026	0.0010	0.02500	0	105	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			
Selenium	0.026	0.0010	0.02500	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C81765**	RunNo: **81765**
Prep Date:	Analysis Date: **10/4/2021**	SeqNo: **2892041** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C81765**	RunNo: **81765**
Prep Date:	Analysis Date: **10/4/2021**	SeqNo: **2892043** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	106	85	115			
Copper	0.027	0.0010	0.02500	0	109	85	115			
Lead	0.012	0.00050	0.01250	0	99.9	85	115			
Selenium	0.027	0.0010	0.02500	0	107	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **D81765**	RunNo: **81765**
Prep Date:	Analysis Date: **10/4/2021**	SeqNo: **2892044** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **D81765**	RunNo: **81765**
Prep Date:	Analysis Date: **10/4/2021**	SeqNo: **2892046** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	105	85	115			

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C81765**	RunNo: **81765**
Prep Date:	Analysis Date: **10/4/2021**	SeqNo: **2892047** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Copper	0.0012	0.0010	0.001000	0	118	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.0011	0.0010	0.001000	0	106	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**

03-Nov-21

Client: Marathon

Project: 2021 GW Sampling 3rd Quarter

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **D81765** RunNo: **81765**
Prep Date: Analysis Date: **10/4/2021** SeqNo: **2892048** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	105	50	150			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B81815** RunNo: **81815**
Prep Date: Analysis Date: **10/5/2021** SeqNo: **2894272** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B81815** RunNo: **81815**
Prep Date: Analysis Date: **10/5/2021** SeqNo: **2894283** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00098	0.0010	0.001000	0	97.8	50	150			J
Copper	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00053	0.00050	0.0005000	0	106	50	150			
Selenium	0.00061	0.0010	0.001000	0	61.0	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B81815** RunNo: **81815**
Prep Date: Analysis Date: **10/5/2021** SeqNo: **2894284** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Copper	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**

03-Nov-21

Client: Marathon

Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-63015**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **63015**	RunNo: **81838**
Prep Date: **10/4/2021**	Analysis Date: **10/5/2021**	SeqNo: **2895126** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-63015**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **63015**	RunNo: **81838**
Prep Date: **10/4/2021**	Analysis Date: **10/5/2021**	SeqNo: **2895127** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00010	0.00020	0.0001500	0	67.1	50	150			J

Sample ID: **LCS-63015**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **63015**	RunNo: **81838**
Prep Date: **10/4/2021**	Analysis Date: **10/5/2021**	SeqNo: **2895128** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0046	0.00020	0.005000	0	91.6	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R81536**	RunNo: **81536**
Prep Date:	Analysis Date: **9/23/2021**	SeqNo: **2880983** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R81536**	RunNo: **81536**
Prep Date:	Analysis Date: **9/23/2021**	SeqNo: **2880984** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	100	90	110			
Chloride	4.7	0.50	5.000	0	94.6	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	95.7	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.4	90	110			
Sulfate	9.7	0.50	10.00	0	96.5	90	110			

Sample ID: **2109C62-001EMS**	SampType: **ms**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB-09-22-21**	Batch ID: **R81536**	RunNo: **81536**
Prep Date:	Analysis Date: **9/23/2021**	SeqNo: **2881005** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.3	73.3	111			
Chloride	4.7	0.50	5.000	0	93.9	84.2	117			
Nitrogen, Nitrite (As N)	0.94	0.10	1.000	0	94.2	75.5	113			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.06960	97.2	86.8	110			
Sulfate	9.5	0.50	10.00	0	94.6	83.3	112			

Sample ID: **2109C62-001EMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB-09-22-21**	Batch ID: **R81536**	RunNo: **81536**
Prep Date:	Analysis Date: **9/23/2021**	SeqNo: **2881006** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	101	73.3	111	1.44	20	
Chloride	4.7	0.50	5.000	0	94.2	84.2	117	0.253	20	
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	94.8	75.5	113	0.698	20	
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.06960	97.6	86.8	110	0.383	20	
Sulfate	9.6	0.50	10.00	0	95.5	83.3	112	0.930	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R81637**	RunNo: **81637**							
Prep Date:	Analysis Date: **9/28/2021**	SeqNo: **2885497**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R81637**	RunNo: **81637**							
Prep Date:	Analysis Date: **9/28/2021**	SeqNo: **2885499**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.0	0.50	5.000	0	101	90	110			
Sulfate	10	0.50	10.00	0	104	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R81622** RunNo: **81622**
Prep Date: Analysis Date: **9/27/2021** SeqNo: **2884501** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	25	1.0	20.00	0	123	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	22	1.0	20.00	0	108	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	94.6	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	104	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **2109c62-003a ms** SampType: **MS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **STP-1-NW** Batch ID: **R81622** RunNo: **81622**
Prep Date: Analysis Date: **9/27/2021** SeqNo: **2884511** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	27	1.0	20.00	0	133	70	130			S
Toluene	21	1.0	20.00	0	107	70	130			
Chlorobenzene	21	1.0	20.00	0	107	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	103	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	108	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		114	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.1	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	11		10.00		108	70	130			

Sample ID: **2109c62-003a msd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **STP-1-NW** Batch ID: **R81622** RunNo: **81622**
Prep Date: Analysis Date: **9/27/2021** SeqNo: **2884512** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	26	1.0	20.00	0	130	70	130	2.31	20	S
Toluene	20	1.0	20.00	0	100	70	130	5.97	20	
Chlorobenzene	20	1.0	20.00	0	100	70	130	6.58	20	
1,1-Dichloroethene	19	1.0	20.00	0	96.3	70	130	6.29	20	
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130	5.27	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		113	70	130	0	0	
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130	0	0	
Surr: Dibromofluoromethane	11		10.00		108	70	130	0	0	
Surr: Toluene-d8	11		10.00		105	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R81622**	RunNo: **81622**	
Prep Date:	Analysis Date: **9/27/2021**	SeqNo: **2884520**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		113	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81622**	RunNo: **81622**
Prep Date:	Analysis Date: **9/27/2021**	SeqNo: **2884520** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	11		10.00		108	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb-62838** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **62838** RunNo: **81683**
Prep Date: **9/27/2021** Analysis Date: **9/29/2021** SeqNo: **2887151** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Benzoic acid	ND	20								
Benzyl alcohol	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	10								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
Di-n-octyl phthalate	ND	20								
Dibenzofuran	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Pentachlorophenol	ND	20								
Phenol	ND	5.0								
Pyridine	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	100		200.0		50.7	15	87			
Surr: Phenol-d5	75		200.0		37.6	15	67.5			
Surr: 2,4,6-Tribromophenol	130		200.0		64.0	15	122			
Surr: Nitrobenzene-d5	56		100.0		56.2	15	103			
Surr: 2-Fluorobiphenyl	56		100.0		56.4	15	103			
Surr: 4-Terphenyl-d14	110		100.0		107	45	137			

Sample ID: **lcs-62838** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **62838** RunNo: **81683**
Prep Date: **9/27/2021** Analysis Date: **9/29/2021** SeqNo: **2887152** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	49	5.0	100.0	0	48.6	15	87.6			
Pentachlorophenol	130	20	200.0	0	66.1	21	111			
Phenol	69	5.0	200.0	0	34.3	16.8	70.5			
Surr: 2-Fluorophenol	95		200.0		47.7	15	84.2			
Surr: Phenol-d5	72		200.0		36.2	15	67.5			
Surr: 2,4,6-Tribromophenol	130		200.0		64.8	15	115			
Surr: Nitrobenzene-d5	56		100.0		56.4	15	103			
Surr: 2-Fluorobiphenyl	56		100.0		55.5	15	105			
Surr: 4-Terphenyl-d14	89		100.0		89.3	42.3	137			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **lcsd-62838** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **62838** RunNo: **81683**
Prep Date: **9/27/2021** Analysis Date: **9/29/2021** SeqNo: **2887153** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	62	5.0	100.0	0	62.4	15	87.6	24.9	30.4	
Pentachlorophenol	120	20	200.0	0	60.6	21	111	8.68	71.6	
Phenol	89	5.0	200.0	0	44.5	16.8	70.5	26.0	37.2	
Surr: 2-Fluorophenol	110		200.0		56.7	15	87	0	0	
Surr: Phenol-d5	87		200.0		43.4	15	67.5	0	0	
Surr: 2,4,6-Tribromophenol	130		200.0		63.6	15	122	0	0	
Surr: Nitrobenzene-d5	69		100.0		68.6	15	103	0	0	
Surr: 2-Fluorobiphenyl	67		100.0		66.6	15	103	0	0	
Surr: 4-Terphenyl-d14	100		100.0		99.6	45	137	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb-62813** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **62813** RunNo: **81719**
Prep Date: **9/24/2021** Analysis Date: **9/30/2021** SeqNo: **2889277** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Surr: Nitrobenzene-d5	2.2		4.000		54.0	21.9	89.8			
Surr: 2,4,6-Tribromophenol	3.8		8.000		48.0	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.7		4.000		43.5	15	84.5			
Surr: 4-Terphenyl-d14	4.1		4.000		103	73.1	152			

Sample ID: **lcs-62813** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **62813** RunNo: **81719**
Prep Date: **9/24/2021** Analysis Date: **9/30/2021** SeqNo: **2889278** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.86	0.10	2.000	0	43.0	15	79.8			
Naphthalene	1.3	0.10	2.000	0	64.0	26.5	90.9			
1-Methylnaphthalene	1.3	0.10	2.000	0	66.0	27.9	88.2			
2-Methylnaphthalene	1.3	0.10	2.000	0	65.0	29.2	87.5			
Acenaphthene	1.4	0.10	2.000	0	70.0	25.6	93.9			
Fluorene	1.5	0.10	2.000	0	73.0	27.4	95.1			
Phenanthrene	1.6	0.10	2.000	0	80.0	25.1	104			
Anthracene	1.6	0.10	2.000	0	81.0	30.1	100			
Pyrene	1.7	0.20	2.000	0	84.0	34.5	112			
Benz(a)anthracene	1.9	0.10	2.000	0	95.0	43.9	132			
Chrysene	1.6	0.10	2.000	0	79.0	39.8	118			
Surr: Nitrobenzene-d5	4.3		5.000		86.0	21.9	89.8			
Surr: 2,4,6-Tribromophenol	7.1		10.00		71.0	23.4	71.6			
Surr: 2-Fluorobiphenyl	3.7		5.000		74.8	15	84.5			
Surr: 4-Terphenyl-d14	5.6		5.000		113	73.1	152			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **lcsd-62813** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **62813** RunNo: **81719**
Prep Date: **9/24/2021** Analysis Date: **9/30/2021** SeqNo: **2889279** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.88	0.10	2.000	0	44.0	15	79.8	2.30	34.2	
Naphthalene	1.4	0.10	2.000	0	68.0	26.5	90.9	6.06	37.6	
1-Methylnaphthalene	1.4	0.10	2.000	0	69.0	27.9	88.2	4.44	33.1	
2-Methylnaphthalene	1.4	0.10	2.000	0	68.0	29.2	87.5	4.51	35.4	
Acenaphthene	1.5	0.10	2.000	0	74.0	25.6	93.9	5.56	36.3	
Fluorene	1.5	0.10	2.000	0	75.0	27.4	95.1	2.70	32.2	
Phenanthrene	1.6	0.10	2.000	0	82.0	25.1	104	2.47	32.9	
Anthracene	1.7	0.10	2.000	0	83.0	30.1	100	2.44	31.5	
Pyrene	1.7	0.20	2.000	0	83.0	34.5	112	1.20	23.3	
Benz(a)anthracene	1.8	0.10	2.000	0	89.0	43.9	132	6.52	29.5	
Chrysene	1.7	0.10	2.000	0	84.0	39.8	118	6.13	22.3	
Surr: Nitrobenzene-d5	4.3		5.000		86.8	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	7.0		10.00		70.4	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	3.7		5.000		74.4	15	84.5	0	0	
Surr: 4-Terphenyl-d14	5.7		5.000		114	73.1	152	0	0	

Sample ID: **mb-62858** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **62858** RunNo: **81719**
Prep Date: **9/27/2021** Analysis Date: **10/1/2021** SeqNo: **2889300** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	2.3		4.000		58.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	4.4		8.000		54.8	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.8		4.000		45.5	15	84.5			
Surr: 4-Terphenyl-d14	3.6		4.000		90.0	73.1	152			

Sample ID: **lcs-62858** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **62858** RunNo: **81719**
Prep Date: **9/27/2021** Analysis Date: **10/1/2021** SeqNo: **2889301** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.2		5.000		64.4	21.9	89.8			
Surr: 2,4,6-Tribromophenol	5.5		10.00		55.0	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.4		5.000		48.4	15	84.5			
Surr: 4-Terphenyl-d14	4.9		5.000		97.2	73.1	152			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **lcsd-62858** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **62858** RunNo: **81719**
Prep Date: **9/27/2021** Analysis Date: **10/1/2021** SeqNo: **2889302** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.4		5.000		68.0	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	5.7		10.00		57.4	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	2.4		5.000		48.8	15	84.5	0	0	
Surr: 4-Terphenyl-d14	4.9		5.000		98.4	73.1	152	0	0	

Sample ID: **mb-62980** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **62980** RunNo: **81884**
Prep Date: **10/1/2021** Analysis Date: **10/7/2021** SeqNo: **2897034** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	2.1		4.000		53.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	4.0		8.000		49.8	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.5		4.000		38.0	15	84.5			
Surr: 4-Terphenyl-d14	3.1		4.000		77.0	73.1	152			

Sample ID: **lcs-62980** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **62980** RunNo: **81884**
Prep Date: **10/1/2021** Analysis Date: **10/7/2021** SeqNo: **2897035** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.9		5.000		78.0	21.9	89.8			
Surr: 2,4,6-Tribromophenol	6.6		10.00		65.6	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.8		5.000		56.4	15	84.5			
Surr: 4-Terphenyl-d14	5.2		5.000		103	73.1	152			

Sample ID: **lcsd-62980** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **62980** RunNo: **81884**
Prep Date: **10/1/2021** Analysis Date: **10/7/2021** SeqNo: **2897036** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.0		5.000		60.0	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	5.8		10.00		58.2	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	2.1		5.000		42.8	15	84.5	0	0	
Surr: 4-Terphenyl-d14	5.1		5.000		102	73.1	152	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109C62**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G81622** RunNo: **81622**
Prep Date: Analysis Date: **9/27/2021** SeqNo: **2884522** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.3	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			

Sample ID: **2109c62-004a ms** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **OW-59** Batch ID: **G81622** RunNo: **81622**
Prep Date: Analysis Date: **9/27/2021** SeqNo: **2884529** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	3.3	0.050	0.5000	2.721	113	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			

Sample ID: **2109c62-004a msd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **OW-59** Batch ID: **G81622** RunNo: **81622**
Prep Date: Analysis Date: **9/27/2021** SeqNo: **2884530** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	3.1	0.050	0.5000	2.721	70.1	70	130	6.71	20	
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G81622** RunNo: **81622**
Prep Date: Analysis Date: **9/27/2021** SeqNo: **2884537** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2109C62** RcptNo: 1

Received By: **Andy Freeman** **9/22/2021 4:40:00 PM**

Completed By: **Desiree Dominguez** **9/22/2021 5:18:52 PM**

Reviewed By: JR 9/23/21

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
   Samples were collected the same day and chilled.
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 15 (<2 or >12 unless noted)

Adjusted? NO

Checked by: TMC 9.23.21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.2	Good	Yes			
2	6.1	Good	Yes			

Released to Imaging: 11/23/2022 10:23:25 AM

Received by OCD: 3/25/2022 3:35:30 PM

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Petroleum Company	☐ Standard ☐ Rush
Mailing Address: 92 Giant Crossing Rd. Jamestown, NM 87347	Project Name: 2021 GW Sampling - 3rd Quarter
Phone #: 808-640-1823	Project #: 697-080-001
Email or Fax#: bmcloughlin@trihydro.com	PO#: 4500267009
QA/QC Package: **Standard** ☐ Level 4 (Full Validation)	Project Manager: Lesli Alexander, Brian McLoughlin
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	Sampler:
EDD (Type)	On Ice: ☒ Yes ☐ No
	# of Coolers: 2
	Cooler Temp(including CF): 4.5-0.3=4.2, 6.4-0.3=6.1

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2109C62	VOCs	TPH GRO	TPH DRO/MRO	SVOC includes 1,4 Dioxane on reques	1,4 Dioxane	WQCC metals	C/A	NO2/NO3 combined	Nitrite	8011 EDB	8260/BTEX/MTBE	COD	Cyanide	TDS/TSS	Gen Chem	PFAS
9-22-21	9:00	water	EB-09-22-21	12		-001	X	X	X	X		X	X									
9-22-21	9:00	water	MKTF-09-22-21	12		-002	X	X	X	X		X	X									
9-22-21	9:30	water	STP-1-NW	11		-003	X	X	X	X		X	X									
9-22-21	9:50	water	OW-59	11		-004	X	X	X	X		X	X									
9-22-21	9:50	water	FB-09-22-21	2		-005	X															
9-22-21	—	water	DUP-09-22-21	11		-006	X	X	X	X		X	X									
		water																				
		water																				
		water																				
		water																				
		water																				
		water																				

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
9-22-2021	1:30				9/22/21	1640
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks: 002 MKTF-38 sample name on bottles. DAD 9/23/21

VOA 001A (1 of 5) had a 30 min time differential No vials for EDB

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report. 9-23-21

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

November 03, 2021

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL:
FAX

RE: 2021 GW Sampling 3rd Quarter OrderNo.: 2109E60

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 13 sample(s) on 9/24/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
Toluene	ND	0.20	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
Acetone	ND	2.5	10		µg/L	1	9/28/2021 11:23:53 PM	R81662
Bromomethane	ND	0.85	3.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
2-Butanone	ND	2.0	10		µg/L	1	9/28/2021 11:23:53 PM	R81662
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
Chloroethane	ND	0.38	2.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
Chloroform	ND	0.13	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
Chloromethane	ND	0.41	3.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
2-Hexanone	ND	1.8	10		µg/L	1	9/28/2021 11:23:53 PM	R81662
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/28/2021 11:23:53 PM	R81662
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
Styrene	ND	0.14	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/28/2021 11:23:53 PM	R81662
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/28/2021 11:23:53 PM	R81662
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	9/28/2021 11:23:53 PM	R81662
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	9/28/2021 11:23:53 PM	R81662
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	9/28/2021 11:23:53 PM	R81662

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: Toluene-d8	107	0	70-130		%Rec	1	9/28/2021 11:23:53 PM	R81662
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/28/2021 11:23:53 PM	G81662
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	9/28/2021 11:23:53 PM	G81662

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.023	0.016	0.064	J	mg/L	1	10/1/2021 2:28:40 PM	62868
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/1/2021 2:28:40 PM	62868
Surr: DNOP	94.9	0	15-142		%Rec	1	10/1/2021 2:28:40 PM	62868

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	10/4/2021 5:54:04 PM	62912
Benzoic acid	ND	1.1	20		µg/L	1	10/4/2021 5:54:04 PM	62912
Benzyl alcohol	ND	0.68	5.0		µg/L	1	10/4/2021 5:54:04 PM	62912
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	10/4/2021 5:54:04 PM	62912
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	10/4/2021 5:54:04 PM	62912
Carbazole	ND	0.56	5.0		µg/L	1	10/4/2021 5:54:04 PM	62912
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	10/4/2021 5:54:04 PM	62912
Dibenzofuran	ND	0.38	5.0		µg/L	1	10/4/2021 5:54:04 PM	62912
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	10/4/2021 5:54:04 PM	62912
Diethyl phthalate	ND	3.9	10		µg/L	1	10/4/2021 5:54:04 PM	62912
Dimethyl phthalate	ND	2.0	10		µg/L	1	10/4/2021 5:54:04 PM	62912
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	10/4/2021 5:54:04 PM	62912
2-Methylphenol	ND	0.51	5.0		µg/L	1	10/4/2021 5:54:04 PM	62912
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	10/4/2021 5:54:04 PM	62912
Pentachlorophenol	ND	0.59	20		µg/L	1	10/4/2021 5:54:04 PM	62912
Phenol	ND	0.33	5.0		µg/L	1	10/4/2021 5:54:04 PM	62912
Pyridine	ND	0.93	5.0		µg/L	1	10/4/2021 5:54:04 PM	62912
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	10/4/2021 5:54:04 PM	62912
Surr: 2-Fluorophenol	58.3	0	15-87		%Rec	1	10/4/2021 5:54:04 PM	62912
Surr: Phenol-d5	43.4	0	15-67.5		%Rec	1	10/4/2021 5:54:04 PM	62912
Surr: 2,4,6-Tribromophenol	69.7	0	15-122		%Rec	1	10/4/2021 5:54:04 PM	62912
Surr: Nitrobenzene-d5	68.4	0	15-103		%Rec	1	10/4/2021 5:54:04 PM	62912
Surr: 2-Fluorobiphenyl	66.8	0	15-103		%Rec	1	10/4/2021 5:54:04 PM	62912
Surr: 4-Terphenyl-d14	124	0	45-137		%Rec	1	10/4/2021 5:54:04 PM	62912
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	10/7/2021 11:31:00 AM	62858
Naphthalene	ND	0.034	0.10		µg/L	1	10/7/2021 11:31:00 AM	62858
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	10/7/2021 11:31:00 AM	62858
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	10/7/2021 11:31:00 AM	62858
Acenaphthene	ND	0.031	0.10		µg/L	1	10/7/2021 11:31:00 AM	62858
Fluorene	ND	0.031	0.10		µg/L	1	10/7/2021 11:31:00 AM	62858
Phenanthrene	ND	0.057	0.10		µg/L	1	10/7/2021 11:31:00 AM	62858
Anthracene	ND	0.034	0.10		µg/L	1	10/7/2021 11:31:00 AM	62858
Pyrene	ND	0.16	0.20		µg/L	1	10/7/2021 11:31:00 AM	62858
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	10/7/2021 11:31:00 AM	62858
Chrysene	ND	0.024	0.10		µg/L	1	10/7/2021 11:31:00 AM	62858
Surr: Nitrobenzene-d5	53.5	0	21.9-89.8		%Rec	1	10/7/2021 11:31:00 AM	62858
Surr: 2-Fluorobiphenyl	49.0	0	15-84.5		%Rec	1	10/7/2021 11:31:00 AM	62858
Surr: 4-Terphenyl-d14	92.0	0	73.1-152		%Rec	1	10/7/2021 11:31:00 AM	62858

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.040	0.10		mg/L	1	9/28/2021 2:01:38 PM	R81640
Chloride	ND	0.25	0.50		mg/L	1	9/28/2021 2:01:38 PM	R81640
Sulfate	ND	0.25	0.50		mg/L	1	9/28/2021 2:01:38 PM	R81640
Nitrate+Nitrite as N	0.11	0.040	1.0	J	mg/L	5	9/28/2021 11:42:13 PM	R81640

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-001F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	9/30/2021 10:58:44 AM	62916
Cadmium	ND	0.0015	0.0020		mg/L	1	9/30/2021 10:58:44 AM	62916
Chromium	ND	0.0021	0.0060		mg/L	1	9/30/2021 10:58:44 AM	62916
Iron	ND	0.013	0.050		mg/L	1	9/30/2021 10:58:44 AM	62916
Manganese	ND	0.00081	0.0020		mg/L	1	9/30/2021 10:58:44 AM	62916
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 10:58:44 AM	62916
Zinc	ND	0.0064	0.010		mg/L	1	9/30/2021 10:58:44 AM	62916
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	ND	0.00013	0.0010		mg/L	1	9/30/2021 5:48:08 PM	62916
Copper	ND	0.00040	0.0010		mg/L	1	9/30/2021 5:48:08 PM	62916
Lead	ND	0.000061	0.00050		mg/L	1	9/30/2021 5:48:08 PM	62916
Selenium	ND	0.00037	0.0010		mg/L	1	9/30/2021 5:48:08 PM	62916
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 1:01:53 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-001G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	10/1/2021 9:27:30 AM	A81725
Cadmium	ND	0.0012	0.0020		mg/L	1	9/30/2021 12:40:10 PM	A81703
Chromium	ND	0.0020	0.0060		mg/L	1	9/30/2021 12:40:10 PM	A81703
Iron	ND	0.010	0.020		mg/L	1	9/30/2021 12:40:10 PM	A81703
Manganese	ND	0.00058	0.0020		mg/L	1	9/30/2021 12:40:10 PM	A81703
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 12:40:10 PM	A81703
Zinc	0.0073	0.0060	0.010	J	mg/L	1	10/1/2021 9:27:30 AM	A81725
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	ND	0.00012	0.0010		mg/L	1	10/4/2021 6:05:13 PM	D81765
Copper	ND	0.00037	0.0010		mg/L	1	10/4/2021 6:05:13 PM	D81765
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2021 6:05:13 PM	D81765
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2021 6:05:13 PM	D81765
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 1:04:19 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	4800	11	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
Toluene	ND	10	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
Ethylbenzene	430	11	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
Methyl tert-butyl ether (MTBE)	170	20	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
1,2,4-Trimethylbenzene	140	6.1	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
Naphthalene	ND	25	100		µg/L	50	9/28/2021 11:52:31 PM	R81662
1-Methylnaphthalene	ND	42	200		µg/L	50	9/28/2021 11:52:31 PM	R81662
2-Methylnaphthalene	ND	35	200		µg/L	50	9/28/2021 11:52:31 PM	R81662
Acetone	ND	130	500		µg/L	50	9/28/2021 11:52:31 PM	R81662
Bromomethane	ND	43	150		µg/L	50	9/28/2021 11:52:31 PM	R81662
2-Butanone	ND	100	500		µg/L	50	9/28/2021 11:52:31 PM	R81662
Chlorobenzene	ND	7.8	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
Chloroethane	21	19	100	J	µg/L	50	9/28/2021 11:52:31 PM	R81662
Chloroform	ND	6.7	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
Chloromethane	ND	21	150		µg/L	50	9/28/2021 11:52:31 PM	R81662
cis-1,2-DCE	ND	19	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
1,2-Dichlorobenzene	ND	7.7	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
1,4-Dichlorobenzene	ND	10	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
1,1-Dichloroethane	60	14	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
1,1-Dichloroethene	ND	10	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
1,2-Dichloropropane	ND	10	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
2-Hexanone	ND	90	500		µg/L	50	9/28/2021 11:52:31 PM	R81662
Isopropylbenzene	ND	9.1	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
4-Isopropyltoluene	ND	10	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
4-Methyl-2-pentanone	ND	44	500		µg/L	50	9/28/2021 11:52:31 PM	R81662
Methylene Chloride	120	25	150	J	µg/L	50	9/28/2021 11:52:31 PM	R81662
n-Butylbenzene	ND	13	150		µg/L	50	9/28/2021 11:52:31 PM	R81662
n-Propylbenzene	24	9.1	50	J	µg/L	50	9/28/2021 11:52:31 PM	R81662
sec-Butylbenzene	ND	7.2	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
Styrene	ND	6.8	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
tert-Butylbenzene	ND	12	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
1,2,4-Trichlorobenzene	ND	12	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
1,1,1-Trichloroethane	ND	15	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
1,1,2-Trichloroethane	ND	9.9	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
Trichloroethene (TCE)	ND	10	50		µg/L	50	9/28/2021 11:52:31 PM	R81662
Vinyl chloride	20	16	50	J	µg/L	50	9/28/2021 11:52:31 PM	R81662
Xylenes, Total	27	19	75	J	µg/L	50	9/28/2021 11:52:31 PM	R81662

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%Rec	50	9/28/2021 11:52:31 PM	R81662
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	50	9/28/2021 11:52:31 PM	R81662
Surr: Dibromofluoromethane	101	0	70-130		%Rec	50	9/28/2021 11:52:31 PM	R81662
Surr: Toluene-d8	102	0	70-130		%Rec	50	9/28/2021 11:52:31 PM	R81662
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	13	0.61	2.5		mg/L	50	9/28/2021 11:52:31 PM	G81662
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	50	9/28/2021 11:52:31 PM	G81662

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	0.95	1.7		mg/L	1	9/30/2021 3:46:20 PM	62901
Motor Oil Range Organics (MRO)	ND	2.1	8.3		mg/L	1	9/30/2021 3:46:20 PM	62901
Surr: DNOP	57.6	0	64.8-167	S	%Rec	1	9/30/2021 3:46:20 PM	62901

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	7.6	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Aniline	ND	7.6	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Anthracene	ND	11	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Benz(a)anthracene	ND	11	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Benzoic acid	ND	16	300	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Benzyl alcohol	ND	10	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Bis(2-ethylhexyl)phthalate	ND	68	150	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Butyl benzyl phthalate	ND	11	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Carbazole	ND	8.5	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Chrysene	ND	11	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Di-n-octyl phthalate	ND	47	300	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Dibenzofuran	ND	5.7	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
1,4-Dichlorobenzene	ND	11	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Diethyl phthalate	ND	59	150	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Dimethyl phthalate	ND	30	150	D	µg/L	10	10/4/2021 6:35:37 PM	62912
2,4-Dimethylphenol	ND	15	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Fluorene	ND	6.6	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
2-Methylphenol	ND	7.8	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
3+4-Methylphenol	ND	6.8	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Naphthalene	ND	33	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Pentachlorophenol	ND	8.9	300	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Phenanthrene	ND	12	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Phenol	16	4.9	76	JD	µg/L	10	10/4/2021 6:35:37 PM	62912
Pyrene	ND	19	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Pyridine	ND	14	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
2,4,6-Trichlorophenol	ND	6.6	76	D	µg/L	10	10/4/2021 6:35:37 PM	62912
Surr: 2-Fluorophenol	35.5	0	15-87	D	%Rec	10	10/4/2021 6:35:37 PM	62912
Surr: Phenol-d5	23.3	0	15-67.5	D	%Rec	10	10/4/2021 6:35:37 PM	62912
Surr: 2,4,6-Tribromophenol	76.2	0	15-122	D	%Rec	10	10/4/2021 6:35:37 PM	62912
Surr: Nitrobenzene-d5	59.2	0	15-103	D	%Rec	10	10/4/2021 6:35:37 PM	62912
Surr: 2-Fluorobiphenyl	40.9	0	15-103	D	%Rec	10	10/4/2021 6:35:37 PM	62912
Surr: 4-Terphenyl-d14	78.2	0	45-137	D	%Rec	10	10/4/2021 6:35:37 PM	62912

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-002E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	2.4	0.20	0.50		mg/L	5	9/28/2021 2:51:04 PM	R81640
Chloride	260	5.0	10	*	mg/L	20	9/28/2021 3:03:26 PM	R81640
Sulfate	12	1.2	2.5		mg/L	5	9/28/2021 2:51:04 PM	R81640
Nitrate+Nitrite as N	0.16	0.040	1.0	J	mg/L	5	9/28/2021 11:54:33 PM	R81640

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-002F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	1.1	0.0082	0.015		mg/L	5	9/30/2021 11:11:52 AM	62916
Cadmium	ND	0.0015	0.0020		mg/L	1	9/30/2021 11:10:25 AM	62916
Chromium	0.0053	0.0021	0.0060	J	mg/L	1	9/30/2021 11:10:25 AM	62916
Iron	6.5	0.13	0.50	*	mg/L	10	9/30/2021 11:58:51 AM	62916
Manganese	1.1	0.0041	0.010	*	mg/L	5	9/30/2021 11:11:52 AM	62916
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 11:10:25 AM	62916
Zinc	0.057	0.0064	0.010		mg/L	1	9/30/2021 11:10:25 AM	62916
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0052	0.00013	0.0010		mg/L	1	9/30/2021 6:22:02 PM	62916
Copper	0.017	0.00040	0.0010		mg/L	1	9/30/2021 6:22:02 PM	62916
Lead	0.0079	0.000061	0.00050		mg/L	1	9/30/2021 6:22:02 PM	62916
Selenium	0.0025	0.00037	0.0010		mg/L	1	9/30/2021 6:22:02 PM	62916
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	0.00024	0.00012	0.00020		mg/L	1	10/6/2021 1:06:46 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:25:00 AM
Lab ID: 2109E60-002G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.83	0.0011	0.0020		mg/L	1	10/1/2021 9:45:32 AM	A81725
Cadmium	ND	0.0012	0.0020		mg/L	1	9/30/2021 12:41:44 PM	A81703
Chromium	ND	0.0020	0.0060		mg/L	1	9/30/2021 12:41:44 PM	A81703
Iron	3.1	0.052	0.10	*	mg/L	5	10/1/2021 9:46:58 AM	A81725
Manganese	1.1	0.0029	0.010	*	mg/L	5	9/30/2021 12:43:05 PM	A81703
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 12:41:44 PM	A81703
Zinc	0.0082	0.0060	0.010	J	mg/L	1	9/30/2021 12:41:44 PM	A81703
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0035	0.00012	0.0010		mg/L	1	10/4/2021 6:09:57 PM	D81765
Copper	ND	0.00037	0.0010		mg/L	1	10/4/2021 6:09:57 PM	D81765
Lead	0.00017	0.000057	0.00050	J	mg/L	1	10/4/2021 6:09:57 PM	D81765
Selenium	0.00062	0.00034	0.0010	J	mg/L	1	10/4/2021 6:09:57 PM	D81765
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 1:09:12 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:45:00 AM
Lab ID: 2109E60-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
Toluene	ND	0.20	1.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
Methyl tert-butyl ether (MTBE)	2000	20	50		µg/L	50	9/29/2021 4:33:41 PM	R81695
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
1,2-Dichloroethane (EDC)	0.35	0.25	1.0	J	µg/L	1	9/29/2021 12:21:14 AM	R81662
Naphthalene	ND	0.50	2.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
Acetone	4.3	2.5	10	J	µg/L	1	9/29/2021 12:21:14 AM	R81662
2-Butanone	ND	2.0	10		µg/L	1	9/29/2021 12:21:14 AM	R81662
Chloroethane	ND	0.38	2.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/29/2021 12:21:14 AM	R81662
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/29/2021 12:21:14 AM	R81662
Surr: 1,2-Dichloroethane-d4	113	0	70-130		%Rec	1	9/29/2021 12:21:14 AM	R81662
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/29/2021 12:21:14 AM	R81662
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	9/29/2021 12:21:14 AM	R81662
Surr: Toluene-d8	107	0	70-130		%Rec	1	9/29/2021 12:21:14 AM	R81662
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.10	0.012	0.050		mg/L	1	9/29/2021 12:21:14 AM	G81662
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	9/29/2021 12:21:14 AM	G81662

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:45:00 AM
Lab ID: 2109E60-003B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	9/29/2021 10:45:01 PM	62897

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:45:00 AM
Lab ID: 2109E60-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.97	0.016	0.064		mg/L	1	10/4/2021 2:44:19 PM	62874
Motor Oil Range Organics (MRO)	0.12	0.052	0.080		mg/L	1	10/4/2021 2:44:19 PM	62874
Surr: DNOP	99.4	0	15-142		%Rec	1	10/4/2021 2:44:19 PM	62874

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:45:00 AM
Lab ID: 2109E60-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.20	0.50		mg/L	5	9/28/2021 3:40:27 PM	R81640
Chloride	200	5.0	10		mg/L	20	9/28/2021 3:52:47 PM	R81640
Bromide	1.6	0.25	0.50		mg/L	5	9/28/2021 3:40:27 PM	R81640
Sulfate	33	1.2	2.5		mg/L	5	9/28/2021 3:40:27 PM	R81640
Nitrate+Nitrite as N	ND	0.040	1.0		mg/L	5	9/29/2021 12:07:00 AM	R81640

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:45:00 AM
Lab ID: 2109E60-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.16	0.0016	0.0030		mg/L	1	9/30/2021 11:13:19 AM	62916
Cadmium	ND	0.0015	0.0020		mg/L	1	9/30/2021 11:13:19 AM	62916
Chromium	0.0060	0.0021	0.0060	J	mg/L	1	9/30/2021 11:13:19 AM	62916
Iron	0.79	0.013	0.050	*	mg/L	1	9/30/2021 11:13:19 AM	62916
Manganese	0.18	0.00081	0.0020	*	mg/L	1	9/30/2021 11:13:19 AM	62916
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 11:13:19 AM	62916
Zinc	ND	0.0064	0.010		mg/L	1	9/30/2021 11:13:19 AM	62916
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.00081	0.00013	0.0010	J	mg/L	1	9/30/2021 5:50:33 PM	62916
Copper	0.0047	0.00040	0.0010		mg/L	1	9/30/2021 5:50:33 PM	62916
Lead	0.0013	0.000061	0.00050		mg/L	1	9/30/2021 5:50:33 PM	62916
Selenium	0.00060	0.00037	0.0010	J	mg/L	1	9/30/2021 5:50:33 PM	62916
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 1:11:39 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 8:45:00 AM
Lab ID: 2109E60-003G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.15	0.0011	0.0020		mg/L	1	10/1/2021 9:48:42 AM	A81725
Cadmium	ND	0.0012	0.0020		mg/L	1	9/30/2021 12:46:04 PM	A81703
Chromium	0.0048	0.0020	0.0060	J	mg/L	1	9/30/2021 12:46:04 PM	A81703
Iron	0.20	0.010	0.020		mg/L	1	10/1/2021 9:48:42 AM	A81725
Manganese	0.18	0.00058	0.0020	*	mg/L	1	9/30/2021 12:46:04 PM	A81703
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 12:46:04 PM	A81703
Zinc	0.048	0.0060	0.010		mg/L	1	10/1/2021 11:20:31 AM	B81725
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00070	0.00012	0.0010	J	mg/L	1	10/4/2021 6:14:41 PM	D81765
Copper	0.0027	0.00037	0.0010		mg/L	1	10/5/2021 2:45:33 PM	B81815
Lead	0.00058	0.000057	0.00050		mg/L	1	10/4/2021 6:14:41 PM	D81765
Selenium	0.00051	0.00034	0.0010	J	mg/L	1	10/4/2021 6:14:41 PM	D81765

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:15:00 AM
Lab ID: 2109E60-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
Toluene	ND	0.20	1.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
Methyl tert-butyl ether (MTBE)	56	0.39	1.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
1,2-Dichloroethane (EDC)	0.41	0.25	1.0	J	µg/L	1	9/29/2021 12:49:51 AM	R81662
Acetone	3.8	2.5	10	J	µg/L	1	9/29/2021 12:49:51 AM	R81662
2-Butanone	ND	2.0	10		µg/L	1	9/29/2021 12:49:51 AM	R81662
Chloroethane	0.47	0.38	2.0	J	µg/L	1	9/29/2021 12:49:51 AM	R81662
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/29/2021 12:49:51 AM	R81662
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/29/2021 12:49:51 AM	R81662
Surr: 1,2-Dichloroethane-d4	113	0	70-130		%Rec	1	9/29/2021 12:49:51 AM	R81662
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	9/29/2021 12:49:51 AM	R81662
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	9/29/2021 12:49:51 AM	R81662
Surr: Toluene-d8	105	0	70-130		%Rec	1	9/29/2021 12:49:51 AM	R81662
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/29/2021 12:49:51 AM	G81662
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	9/29/2021 12:49:51 AM	G81662

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:15:00 AM
Lab ID: 2109E60-004B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	9/29/2021 11:00:08 PM	62897

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:15:00 AM
Lab ID: 2109E60-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.020	0.016	0.064	J	mg/L	1	10/4/2021 3:08:04 PM	62874
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/4/2021 3:08:04 PM	62874
Surr: DNOP	106	0	15-142		%Rec	1	10/4/2021 3:08:04 PM	62874

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:15:00 AM
Lab ID: 2109E60-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	10/4/2021 7:17:09 PM	62912
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	10/4/2021 7:17:09 PM	62912
Carbazole	ND	0.56	5.0		µg/L	1	10/4/2021 7:17:09 PM	62912
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	10/4/2021 7:17:09 PM	62912
Dibenzofuran	ND	0.38	5.0		µg/L	1	10/4/2021 7:17:09 PM	62912
Dimethyl phthalate	ND	2.0	10		µg/L	1	10/4/2021 7:17:09 PM	62912
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	10/4/2021 7:17:09 PM	62912
2-Methylphenol	ND	0.51	5.0		µg/L	1	10/4/2021 7:17:09 PM	62912
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	10/4/2021 7:17:09 PM	62912
Phenol	ND	0.33	5.0		µg/L	1	10/4/2021 7:17:09 PM	62912
Surr: 2-Fluorophenol	60.9	0	15-87		%Rec	1	10/4/2021 7:17:09 PM	62912
Surr: Phenol-d5	47.6	0	15-67.5		%Rec	1	10/4/2021 7:17:09 PM	62912
Surr: 2,4,6-Tribromophenol	76.8	0	15-122		%Rec	1	10/4/2021 7:17:09 PM	62912
Surr: Nitrobenzene-d5	69.0	0	15-103		%Rec	1	10/4/2021 7:17:09 PM	62912
Surr: 2-Fluorobiphenyl	71.0	0	15-103		%Rec	1	10/4/2021 7:17:09 PM	62912
Surr: 4-Terphenyl-d14	105	0	45-137		%Rec	1	10/4/2021 7:17:09 PM	62912
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	10/7/2021 12:15:00 PM	62858
Naphthalene	ND	0.034	0.10		µg/L	1	10/7/2021 12:15:00 PM	62858
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	10/7/2021 12:15:00 PM	62858
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	10/7/2021 12:15:00 PM	62858
Acenaphthene	ND	0.031	0.10		µg/L	1	10/7/2021 12:15:00 PM	62858
Fluorene	ND	0.031	0.10		µg/L	1	10/7/2021 12:15:00 PM	62858
Phenanthrene	ND	0.057	0.10		µg/L	1	10/7/2021 12:15:00 PM	62858
Fluoranthene	ND	0.10	0.20		µg/L	1	10/7/2021 12:15:00 PM	62858
Pyrene	ND	0.16	0.20		µg/L	1	10/7/2021 12:15:00 PM	62858
Surr: Nitrobenzene-d5	58.0	0	21.9-89.8		%Rec	1	10/7/2021 12:15:00 PM	62858
Surr: 2-Fluorobiphenyl	52.5	0	15-84.5		%Rec	1	10/7/2021 12:15:00 PM	62858
Surr: 4-Terphenyl-d14	97.5	0	73.1-152		%Rec	1	10/7/2021 12:15:00 PM	62858

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:15:00 AM
Lab ID: 2109E60-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.48	0.20	0.50	J	mg/L	5	9/28/2021 4:05:09 PM	R81640
Chloride	44	1.2	2.5		mg/L	5	9/28/2021 4:05:09 PM	R81640
Sulfate	160	1.2	2.5		mg/L	5	9/28/2021 4:05:09 PM	R81640
Nitrate+Nitrite as N	0.072	0.040	1.0	J	mg/L	5	9/29/2021 12:19:20 AM	R81640

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:15:00 AM
Lab ID: 2109E60-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.091	0.0016	0.0030		mg/L	1	9/30/2021 11:16:27 AM	62916
Cadmium	ND	0.0015	0.0020		mg/L	1	9/30/2021 11:16:27 AM	62916
Chromium	0.0065	0.0021	0.0060		mg/L	1	9/30/2021 11:16:27 AM	62916
Iron	0.73	0.013	0.050	*	mg/L	1	9/30/2021 11:16:27 AM	62916
Manganese	0.13	0.00081	0.0020	*	mg/L	1	9/30/2021 11:16:27 AM	62916
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 11:16:27 AM	62916
Zinc	ND	0.0064	0.010		mg/L	1	9/30/2021 11:16:27 AM	62916
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0021	0.00013	0.0010		mg/L	1	9/30/2021 5:52:59 PM	62916
Copper	0.00097	0.00040	0.0010	J	mg/L	1	9/30/2021 5:52:59 PM	62916
Lead	0.00075	0.000061	0.00050		mg/L	1	9/30/2021 5:52:59 PM	62916
Selenium	0.00041	0.00037	0.0010	J	mg/L	1	9/30/2021 5:52:59 PM	62916
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 1:14:06 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-50
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:15:00 AM
Lab ID: 2109E60-004G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.054	0.0011	0.0020		mg/L	1	10/1/2021 9:50:28 AM	A81725
Cadmium	ND	0.0012	0.0020		mg/L	1	9/30/2021 12:58:03 PM	A81703
Chromium	ND	0.0020	0.0060		mg/L	1	9/30/2021 12:58:03 PM	A81703
Iron	0.011	0.010	0.020	J	mg/L	1	9/30/2021 12:58:03 PM	A81703
Manganese	0.12	0.00058	0.0020	*	mg/L	1	10/1/2021 9:50:28 AM	A81725
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 12:58:03 PM	A81703
Zinc	0.091	0.0060	0.010		mg/L	1	10/1/2021 11:27:06 AM	B81725
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0021	0.00012	0.0010		mg/L	1	10/4/2021 6:19:25 PM	D81765
Copper	0.0012	0.00037	0.0010		mg/L	1	10/5/2021 3:14:36 PM	B81815
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2021 6:19:25 PM	D81765
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2021 6:19:25 PM	D81765

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:40:00 AM
Lab ID: 2109E60-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
Toluene	ND	0.20	1.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
Methyl tert-butyl ether (MTBE)	2.4	0.39	1.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
1,2-Dichloroethane (EDC)	0.38	0.25	1.0	J	µg/L	1	9/29/2021 1:18:33 AM	R81662
Acetone	ND	2.5	10		µg/L	1	9/29/2021 1:18:33 AM	R81662
2-Butanone	ND	2.0	10		µg/L	1	9/29/2021 1:18:33 AM	R81662
Chloroethane	ND	0.38	2.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/29/2021 1:18:33 AM	R81662
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/29/2021 1:18:33 AM	R81662
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	9/29/2021 1:18:33 AM	R81662
Surr: 4-Bromofluorobenzene	98.9	0	70-130		%Rec	1	9/29/2021 1:18:33 AM	R81662
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	9/29/2021 1:18:33 AM	R81662
Surr: Toluene-d8	103	0	70-130		%Rec	1	9/29/2021 1:18:33 AM	R81662
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/29/2021 1:18:33 AM	G81662
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	9/29/2021 1:18:33 AM	G81662

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:40:00 AM
Lab ID: 2109E60-005B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	9/29/2021 11:15:14 PM	62897

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:40:00 AM
Lab ID: 2109E60-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	ND	0.016	0.064		mg/L	1	10/4/2021 3:31:50 PM	62874
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/4/2021 3:31:50 PM	62874
Surr: DNOP	101	0	15-142		%Rec	1	10/4/2021 3:31:50 PM	62874

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:40:00 AM
Lab ID: 2109E60-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	10/4/2021 8:49:34 PM	62912
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	10/4/2021 8:49:34 PM	62912
Carbazole	ND	0.56	5.0		µg/L	1	10/4/2021 8:49:34 PM	62912
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	10/4/2021 8:49:34 PM	62912
Dibenzofuran	ND	0.38	5.0		µg/L	1	10/4/2021 8:49:34 PM	62912
Dimethyl phthalate	ND	2.0	10		µg/L	1	10/4/2021 8:49:34 PM	62912
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	10/4/2021 8:49:34 PM	62912
2-Methylphenol	ND	0.51	5.0		µg/L	1	10/4/2021 8:49:34 PM	62912
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	10/4/2021 8:49:34 PM	62912
Phenol	ND	0.33	5.0		µg/L	1	10/4/2021 8:49:34 PM	62912
Surr: 2-Fluorophenol	55.8	0	15-87		%Rec	1	10/4/2021 8:49:34 PM	62912
Surr: Phenol-d5	40.7	0	15-67.5		%Rec	1	10/4/2021 8:49:34 PM	62912
Surr: 2,4,6-Tribromophenol	71.1	0	15-122		%Rec	1	10/4/2021 8:49:34 PM	62912
Surr: Nitrobenzene-d5	63.6	0	15-103		%Rec	1	10/4/2021 8:49:34 PM	62912
Surr: 2-Fluorobiphenyl	67.1	0	15-103		%Rec	1	10/4/2021 8:49:34 PM	62912
Surr: 4-Terphenyl-d14	114	0	45-137		%Rec	1	10/4/2021 8:49:34 PM	62912
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	10/7/2021 12:59:00 PM	62858
Naphthalene	ND	0.034	0.10		µg/L	1	10/7/2021 12:59:00 PM	62858
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	10/7/2021 12:59:00 PM	62858
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	10/7/2021 12:59:00 PM	62858
Acenaphthene	ND	0.031	0.10		µg/L	1	10/7/2021 12:59:00 PM	62858
Fluorene	ND	0.031	0.10		µg/L	1	10/7/2021 12:59:00 PM	62858
Phenanthrene	ND	0.057	0.10		µg/L	1	10/7/2021 12:59:00 PM	62858
Fluoranthene	ND	0.10	0.20		µg/L	1	10/7/2021 12:59:00 PM	62858
Pyrene	ND	0.16	0.20		µg/L	1	10/7/2021 12:59:00 PM	62858
Surr: Nitrobenzene-d5	49.5	0	21.9-89.8		%Rec	1	10/7/2021 12:59:00 PM	62858
Surr: 2-Fluorobiphenyl	45.0	0	15-84.5		%Rec	1	10/7/2021 12:59:00 PM	62858
Surr: 4-Terphenyl-d14	84.0	0	73.1-152		%Rec	1	10/7/2021 12:59:00 PM	62858

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:40:00 AM
Lab ID: 2109E60-005E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.54	0.20	0.50		mg/L	5	9/28/2021 4:29:52 PM	R81640
Chloride	26	1.2	2.5		mg/L	5	9/28/2021 4:29:52 PM	R81640
Sulfate	140	1.2	2.5		mg/L	5	9/28/2021 4:29:52 PM	R81640
Nitrate+Nitrite as N	0.11	0.040	1.0	J	mg/L	5	9/29/2021 12:31:43 AM	R81640

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:40:00 AM
Lab ID: 2109E60-005F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.049	0.0016	0.0030		mg/L	1	9/30/2021 11:19:35 AM	62916
Cadmium	ND	0.0015	0.0020		mg/L	1	9/30/2021 11:19:35 AM	62916
Chromium	0.0049	0.0021	0.0060	J	mg/L	1	9/30/2021 11:19:35 AM	62916
Iron	1.2	0.064	0.25	*	mg/L	5	9/30/2021 11:21:03 AM	62916
Manganese	0.075	0.00081	0.0020	*	mg/L	1	9/30/2021 11:19:35 AM	62916
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 11:19:35 AM	62916
Zinc	0.0071	0.0064	0.010	J	mg/L	1	9/30/2021 11:19:35 AM	62916
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.00076	0.00013	0.0010	J	mg/L	1	9/30/2021 5:55:23 PM	62916
Copper	0.0018	0.00040	0.0010		mg/L	1	9/30/2021 5:55:23 PM	62916
Lead	0.00087	0.000061	0.00050		mg/L	1	9/30/2021 5:55:23 PM	62916
Selenium	0.00056	0.00037	0.0010	J	mg/L	1	9/30/2021 5:55:23 PM	62916
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 1:16:32 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-52
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 9:40:00 AM
Lab ID: 2109E60-005G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.028	0.0011	0.0020		mg/L	1	10/1/2021 11:32:01 AM	B81725
Cadmium	ND	0.0012	0.0020		mg/L	1	9/30/2021 1:01:16 PM	A81703
Chromium	ND	0.0020	0.0060		mg/L	1	9/30/2021 1:01:16 PM	A81703
Iron	0.055	0.010	0.020		mg/L	1	10/1/2021 11:32:01 AM	B81725
Manganese	0.027	0.00058	0.0020		mg/L	1	10/1/2021 11:32:01 AM	B81725
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 1:01:16 PM	A81703
Zinc	0.050	0.0060	0.010		mg/L	1	10/1/2021 11:32:01 AM	B81725
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00062	0.00012	0.0010	J	mg/L	1	10/4/2021 6:24:09 PM	D81765
Copper	ND	0.00037	0.0010		mg/L	1	10/4/2021 6:24:09 PM	D81765
Lead	ND	0.000057	0.00050		mg/L	1	10/4/2021 6:24:09 PM	D81765
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2021 6:24:09 PM	D81765

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:15:00 AM
Lab ID: 2109E60-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	1.1	5.0		µg/L	5	9/29/2021 2:15:56 AM	R81662
Toluene	ND	1.0	5.0		µg/L	5	9/29/2021 2:15:56 AM	R81662
Ethylbenzene	ND	1.1	5.0		µg/L	5	9/29/2021 2:15:56 AM	R81662
Methyl tert-butyl ether (MTBE)	3700	20	50		µg/L	50	9/29/2021 1:47:14 AM	R81662
1,2,4-Trimethylbenzene	ND	0.61	5.0		µg/L	5	9/29/2021 2:15:56 AM	R81662
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	9/29/2021 2:15:56 AM	R81662
1,2-Dichloroethane (EDC)	1.5	1.3	5.0	J	µg/L	5	9/29/2021 2:15:56 AM	R81662
Naphthalene	ND	2.5	10		µg/L	5	9/29/2021 2:15:56 AM	R81662
1-Methylnaphthalene	ND	4.2	20		µg/L	5	9/29/2021 2:15:56 AM	R81662
2-Methylnaphthalene	ND	3.5	20		µg/L	5	9/29/2021 2:15:56 AM	R81662
Acetone	ND	13	50		µg/L	5	9/29/2021 2:15:56 AM	R81662
2-Butanone	ND	10	50		µg/L	5	9/29/2021 2:15:56 AM	R81662
Chloroethane	4.4	1.9	10	J	µg/L	5	9/29/2021 2:15:56 AM	R81662
1,1-Dichloroethane	ND	1.4	5.0		µg/L	5	9/29/2021 2:15:56 AM	R81662
Isopropylbenzene	ND	0.91	5.0		µg/L	5	9/29/2021 2:15:56 AM	R81662
Methylene Chloride	8.2	2.5	15	J	µg/L	5	9/29/2021 2:15:56 AM	R81662
n-Butylbenzene	ND	1.3	15		µg/L	5	9/29/2021 2:15:56 AM	R81662
n-Propylbenzene	ND	0.91	5.0		µg/L	5	9/29/2021 2:15:56 AM	R81662
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	9/29/2021 2:15:56 AM	R81662
Xylenes, Total	ND	1.9	7.5		µg/L	5	9/29/2021 2:15:56 AM	R81662
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	5	9/29/2021 2:15:56 AM	R81662
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	5	9/29/2021 2:15:56 AM	R81662
Surr: Dibromofluoromethane	102	0	70-130		%Rec	5	9/29/2021 2:15:56 AM	R81662
Surr: Toluene-d8	107	0	70-130		%Rec	5	9/29/2021 2:15:56 AM	R81662
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.074	0.061	0.25	J	mg/L	5	9/29/2021 2:15:56 AM	G81662
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	5	9/29/2021 2:15:56 AM	G81662

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:15:00 AM
Lab ID: 2109E60-006B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	9/29/2021 11:30:25 PM	62897

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:15:00 AM
Lab ID: 2109E60-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.34	0.016	0.064		mg/L	1	10/4/2021 3:55:35 PM	62874
Motor Oil Range Organics (MRO)	0.059	0.052	0.080	J	mg/L	1	10/4/2021 3:55:35 PM	62874
Surr: DNOP	106	0	15-142		%Rec	1	10/4/2021 3:55:35 PM	62874

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:15:00 AM
Lab ID: 2109E60-006E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.26	0.20	0.50	J	mg/L	5	9/28/2021 4:54:36 PM	R81640
Chloride	190	5.0	10		mg/L	20	9/28/2021 5:06:56 PM	R81640
Bromide	1.5	0.25	0.50		mg/L	5	9/28/2021 4:54:36 PM	R81640
Sulfate	65	1.2	2.5		mg/L	5	9/28/2021 4:54:36 PM	R81640
Nitrate+Nitrite as N	0.058	0.040	1.0	J	mg/L	5	9/29/2021 1:21:07 AM	R81640

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:15:00 AM
Lab ID: 2109E60-006F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.12	0.0016	0.0030		mg/L	1	9/30/2021 11:22:43 AM	62916
Cadmium	ND	0.0015	0.0020		mg/L	1	9/30/2021 11:22:43 AM	62916
Chromium	ND	0.0021	0.0060		mg/L	1	9/30/2021 11:22:43 AM	62916
Iron	0.80	0.013	0.050	*	mg/L	1	9/30/2021 11:22:43 AM	62916
Manganese	0.35	0.00081	0.0020	*	mg/L	1	9/30/2021 11:22:43 AM	62916
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 11:22:43 AM	62916
Zinc	ND	0.0064	0.010		mg/L	1	9/30/2021 11:22:43 AM	62916
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.00075	0.00013	0.0010	J	mg/L	1	9/30/2021 5:57:49 PM	62916
Copper	0.00088	0.00040	0.0010	J	mg/L	1	9/30/2021 5:57:49 PM	62916
Lead	0.00058	0.000061	0.00050		mg/L	1	9/30/2021 5:57:49 PM	62916
Selenium	0.00045	0.00037	0.0010	J	mg/L	1	9/30/2021 5:57:49 PM	62916
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 1:19:00 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:15:00 AM
Lab ID: 2109E60-006G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.10	0.0011	0.0020		mg/L	1	10/1/2021 11:33:36 AM	B81725
Cadmium	ND	0.0012	0.0020		mg/L	1	9/30/2021 1:04:26 PM	A81703
Chromium	ND	0.0020	0.0060		mg/L	1	9/30/2021 1:04:26 PM	A81703
Iron	0.094	0.010	0.020		mg/L	1	10/1/2021 11:33:36 AM	B81725
Manganese	0.34	0.00058	0.0020	*	mg/L	1	10/1/2021 11:33:36 AM	B81725
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 1:04:26 PM	A81703
Zinc	0.076	0.0060	0.010		mg/L	1	10/1/2021 11:33:36 AM	B81725
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00069	0.00012	0.0010	J	mg/L	1	10/4/2021 6:28:53 PM	D81765
Copper	0.0015	0.00037	0.0010		mg/L	1	10/5/2021 3:17:16 PM	B81815
Lead	0.00024	0.000057	0.00050	J	mg/L	1	10/4/2021 6:28:53 PM	D81765
Selenium	ND	0.00034	0.0010		mg/L	1	10/4/2021 6:28:53 PM	D81765

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:25:00 AM
Lab ID: 2109E60-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	30000	110	500		µg/L	500	9/29/2021 5:02:17 PM	R81695
Toluene	ND	10	50		µg/L	50	9/29/2021 5:30:52 PM	R81695
Ethylbenzene	1200	11	50		µg/L	50	9/29/2021 5:30:52 PM	R81695
Methyl tert-butyl ether (MTBE)	810	20	50		µg/L	50	9/29/2021 5:30:52 PM	R81695
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	9/29/2021 5:30:52 PM	R81695
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	9/29/2021 5:30:52 PM	R81695
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	9/29/2021 5:30:52 PM	R81695
Naphthalene	29	25	100	J	µg/L	50	9/29/2021 5:30:52 PM	R81695
1-Methylnaphthalene	ND	42	200		µg/L	50	9/29/2021 5:30:52 PM	R81695
2-Methylnaphthalene	ND	35	200		µg/L	50	9/29/2021 5:30:52 PM	R81695
Acetone	ND	130	500		µg/L	50	9/29/2021 5:30:52 PM	R81695
2-Butanone	ND	100	500		µg/L	50	9/29/2021 5:30:52 PM	R81695
Chloroethane	50	19	100	J	µg/L	50	9/29/2021 5:30:52 PM	R81695
1,1-Dichloroethane	ND	14	50		µg/L	50	9/29/2021 5:30:52 PM	R81695
Isopropylbenzene	19	9.1	50	J	µg/L	50	9/29/2021 5:30:52 PM	R81695
Methylene Chloride	120	25	150	J	µg/L	50	9/29/2021 5:30:52 PM	R81695
n-Butylbenzene	ND	13	150		µg/L	50	9/29/2021 5:30:52 PM	R81695
n-Propylbenzene	61	9.1	50		µg/L	50	9/29/2021 5:30:52 PM	R81695
sec-Butylbenzene	ND	7.2	50		µg/L	50	9/29/2021 5:30:52 PM	R81695
Xylenes, Total	ND	19	75		µg/L	50	9/29/2021 5:30:52 PM	R81695
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	50	9/29/2021 5:30:52 PM	R81695
Surr: 4-Bromofluorobenzene	96.7	0	70-130		%Rec	50	9/29/2021 5:30:52 PM	R81695
Surr: Dibromofluoromethane	98.2	0	70-130		%Rec	50	9/29/2021 5:30:52 PM	R81695
Surr: Toluene-d8	109	0	70-130		%Rec	50	9/29/2021 5:30:52 PM	R81695
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	59	0.61	2.5		mg/L	50	9/29/2021 5:30:52 PM	R81695
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	50	9/29/2021 5:30:52 PM	R81695

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:25:00 AM
Lab ID: 2109E60-007B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	9/29/2021 11:45:31 PM	62897

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:25:00 AM
Lab ID: 2109E60-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	3.0	0.016	0.064		mg/L	1	10/4/2021 4:19:21 PM	62874
Motor Oil Range Organics (MRO)	0.16	0.052	0.080		mg/L	1	10/4/2021 4:19:21 PM	62874
Surr: DNOP	98.7	0	15-142		%Rec	1	10/4/2021 4:19:21 PM	62874

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:25:00 AM
Lab ID: 2109E60-007E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.21	0.20	0.50	J	mg/L	5	9/28/2021 5:19:17 PM	R81640
Chloride	97	5.0	10		mg/L	20	9/28/2021 5:31:38 PM	R81640
Bromide	1.8	0.25	0.50		mg/L	5	9/28/2021 5:19:17 PM	R81640
Sulfate	1.3	1.2	2.5	J	mg/L	5	9/28/2021 5:19:17 PM	R81640
Nitrate+Nitrite as N	ND	0.040	1.0		mg/L	5	9/29/2021 1:33:27 AM	R81640

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:25:00 AM
Lab ID: 2109E60-007F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	2.0	0.0082	0.015	*	mg/L	5	9/30/2021 11:33:33 AM	62916
Cadmium	ND	0.0015	0.0020		mg/L	1	9/30/2021 11:32:04 AM	62916
Chromium	ND	0.0021	0.0060		mg/L	1	9/30/2021 11:32:04 AM	62916
Iron	4.0	0.064	0.25	*	mg/L	5	9/30/2021 11:33:33 AM	62916
Manganese	1.8	0.0041	0.010	*	mg/L	5	9/30/2021 11:33:33 AM	62916
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 11:32:04 AM	62916
Zinc	ND	0.0064	0.010		mg/L	1	9/30/2021 11:32:04 AM	62916
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0043	0.00013	0.0010		mg/L	1	9/30/2021 6:05:06 PM	62916
Copper	ND	0.00040	0.0010		mg/L	1	9/30/2021 6:05:06 PM	62916
Lead	0.00029	0.000061	0.00050	J	mg/L	1	9/30/2021 6:05:06 PM	62916
Selenium	0.00059	0.00037	0.0010	J	mg/L	1	9/30/2021 6:05:06 PM	62916
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 1:21:26 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-14
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:25:00 AM
Lab ID: 2109E60-007G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	2.1	0.0056	0.010	*	mg/L	5	10/1/2021 11:36:33 AM	B81725
Cadmium	ND	0.0012	0.0020		mg/L	1	9/30/2021 1:07:40 PM	A81703
Chromium	ND	0.0020	0.0060		mg/L	1	9/30/2021 1:07:40 PM	A81703
Iron	3.5	0.052	0.10	*	mg/L	5	10/1/2021 11:36:33 AM	B81725
Manganese	1.8	0.0029	0.010	*	mg/L	5	10/1/2021 11:36:33 AM	B81725
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 1:07:40 PM	A81703
Zinc	0.038	0.0060	0.010		mg/L	1	10/1/2021 11:35:12 AM	B81725
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0038	0.00012	0.0010		mg/L	1	10/1/2021 3:49:06 PM	B81743
Copper	ND	0.00037	0.0010		mg/L	1	10/1/2021 3:49:06 PM	B81743
Lead	ND	0.000057	0.00050		mg/L	1	10/1/2021 3:49:06 PM	B81743
Selenium	ND	0.00034	0.0010		mg/L	1	10/1/2021 3:49:06 PM	B81743

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:40:00 AM
Lab ID: 2109E60-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	11000	110	500		µg/L	500	9/30/2021 3:45:26 PM	R81729
Toluene	160	10	50		µg/L	50	9/29/2021 5:59:29 PM	R81695
Ethylbenzene	600	11	50		µg/L	50	9/29/2021 5:59:29 PM	R81695
Methyl tert-butyl ether (MTBE)	1300	20	50		µg/L	50	9/29/2021 5:59:29 PM	R81695
1,2,4-Trimethylbenzene	140	6.1	50		µg/L	50	9/29/2021 5:59:29 PM	R81695
1,3,5-Trimethylbenzene	18	9.1	50	J	µg/L	50	9/29/2021 5:59:29 PM	R81695
1,2-Dichloroethane (EDC)	15	13	50	J	µg/L	50	9/29/2021 5:59:29 PM	R81695
Acetone	ND	130	500		µg/L	50	9/29/2021 5:59:29 PM	R81695
2-Butanone	ND	100	500		µg/L	50	9/29/2021 5:59:29 PM	R81695
Chloroethane	ND	19	100		µg/L	50	9/29/2021 5:59:29 PM	R81695
1,1-Dichloroethane	ND	14	50		µg/L	50	9/29/2021 5:59:29 PM	R81695
Isopropylbenzene	20	9.1	50	J	µg/L	50	9/29/2021 5:59:29 PM	R81695
4-Isopropyltoluene	ND	10	50		µg/L	50	9/29/2021 5:59:29 PM	R81695
Methylene Chloride	120	25	150	J	µg/L	50	9/29/2021 5:59:29 PM	R81695
n-Butylbenzene	ND	13	150		µg/L	50	9/29/2021 5:59:29 PM	R81695
n-Propylbenzene	50	9.1	50	J	µg/L	50	9/29/2021 5:59:29 PM	R81695
sec-Butylbenzene	ND	7.2	50		µg/L	50	9/29/2021 5:59:29 PM	R81695
tert-Butylbenzene	ND	12	50		µg/L	50	9/29/2021 5:59:29 PM	R81695
Xylenes, Total	300	19	75		µg/L	50	9/29/2021 5:59:29 PM	R81695
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%Rec	50	9/29/2021 5:59:29 PM	R81695
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	50	9/29/2021 5:59:29 PM	R81695
Surr: Dibromofluoromethane	99.3	0	70-130		%Rec	50	9/29/2021 5:59:29 PM	R81695
Surr: Toluene-d8	109	0	70-130		%Rec	50	9/29/2021 5:59:29 PM	R81695
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	28	0.61	2.5		mg/L	50	9/29/2021 5:59:29 PM	R81695
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	50	9/29/2021 5:59:29 PM	R81695

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:40:00 AM
Lab ID: 2109E60-008B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	9/30/2021 12:00:35 AM	62897

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:40:00 AM
Lab ID: 2109E60-008C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	3.4	0.016	0.064		mg/L	1	10/4/2021 4:43:08 PM	62874
Motor Oil Range Organics (MRO)	0.10	0.052	0.080		mg/L	1	10/4/2021 4:43:08 PM	62874
Surr: DNOP	147	0	15-142	S	%Rec	1	10/4/2021 4:43:08 PM	62874

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:40:00 AM
Lab ID: 2109E60-008D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	10/4/2021 9:30:50 PM	62912
Bis(2-ethylhexyl)phthalate	5.5	4.5	10	J	µg/L	1	10/4/2021 9:30:50 PM	62912
Carbazole	5.4	0.56	5.0		µg/L	1	10/4/2021 9:30:50 PM	62912
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	10/4/2021 9:30:50 PM	62912
Dibenzofuran	1.8	0.38	5.0	J	µg/L	1	10/4/2021 9:30:50 PM	62912
Dimethyl phthalate	ND	2.0	10		µg/L	1	10/4/2021 9:30:50 PM	62912
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	10/4/2021 9:30:50 PM	62912
2-Methylphenol	ND	0.51	5.0		µg/L	1	10/4/2021 9:30:50 PM	62912
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	10/4/2021 9:30:50 PM	62912
Phenol	46	0.33	5.0		µg/L	1	10/4/2021 9:30:50 PM	62912
Surr: 2-Fluorophenol	57.0	0	15-87		%Rec	1	10/4/2021 9:30:50 PM	62912
Surr: Phenol-d5	44.2	0	15-67.5		%Rec	1	10/4/2021 9:30:50 PM	62912
Surr: 2,4,6-Tribromophenol	82.4	0	15-122		%Rec	1	10/4/2021 9:30:50 PM	62912
Surr: Nitrobenzene-d5	65.9	0	15-103		%Rec	1	10/4/2021 9:30:50 PM	62912
Surr: 2-Fluorobiphenyl	65.5	0	15-103		%Rec	1	10/4/2021 9:30:50 PM	62912
Surr: 4-Terphenyl-d14	104	0	45-137		%Rec	1	10/4/2021 9:30:50 PM	62912
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.0	0.048	1.0		µg/L	1	10/7/2021 1:43:00 PM	62858
Naphthalene	12	0.034	0.10		µg/L	1	10/7/2021 1:43:00 PM	62858
1-Methylnaphthalene	13	0.024	0.10		µg/L	1	10/7/2021 1:43:00 PM	62858
2-Methylnaphthalene	4.0	0.034	0.10		µg/L	1	10/7/2021 1:43:00 PM	62858
Acenaphthene	0.36	0.031	0.10		µg/L	1	10/7/2021 1:43:00 PM	62858
Fluorene	0.90	0.031	0.10		µg/L	1	10/7/2021 1:43:00 PM	62858
Phenanthrene	0.76	0.057	0.10		µg/L	1	10/7/2021 1:43:00 PM	62858
Fluoranthene	0.20	0.10	0.20		µg/L	1	10/7/2021 1:43:00 PM	62858
Pyrene	0.16	0.16	0.20	J	µg/L	1	10/7/2021 1:43:00 PM	62858
Surr: Nitrobenzene-d5	8.50	0	21.9-89.8	S	%Rec	1	10/7/2021 1:43:00 PM	62858
Surr: 2-Fluorobiphenyl	35.5	0	15-84.5		%Rec	1	10/7/2021 1:43:00 PM	62858
Surr: 4-Terphenyl-d14	87.0	0	73.1-152		%Rec	1	10/7/2021 1:43:00 PM	62858

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:40:00 AM
Lab ID: 2109E60-008E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.20	0.50		mg/L	5	9/28/2021 6:08:41 PM	R81640
Chloride	170	5.0	10		mg/L	20	9/28/2021 6:21:03 PM	R81640
Sulfate	ND	1.2	2.5		mg/L	5	9/28/2021 6:08:41 PM	R81640
Nitrate+Nitrite as N	0.10	0.040	1.0	J	mg/L	5	9/29/2021 1:45:47 AM	R81640

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:40:00 AM
Lab ID: 2109E60-008F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.56	0.0016	0.0030		mg/L	1	9/30/2021 11:35:01 AM	62916
Cadmium	ND	0.0015	0.0020		mg/L	1	9/30/2021 11:35:01 AM	62916
Chromium	ND	0.0021	0.0060		mg/L	1	9/30/2021 11:35:01 AM	62916
Iron	3.8	0.064	0.25	*	mg/L	5	9/30/2021 11:36:28 AM	62916
Manganese	3.2	0.0041	0.010	*	mg/L	5	9/30/2021 11:36:28 AM	62916
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 11:35:01 AM	62916
Zinc	ND	0.0064	0.010		mg/L	1	9/30/2021 11:35:01 AM	62916
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0055	0.00013	0.0010		mg/L	1	9/30/2021 6:07:31 PM	62916
Copper	0.00048	0.00040	0.0010	J	mg/L	1	9/30/2021 6:07:31 PM	62916
Lead	0.00049	0.000061	0.00050	J	mg/L	1	9/30/2021 6:07:31 PM	62916
Selenium	0.00063	0.00037	0.0010	J	mg/L	1	9/30/2021 6:07:31 PM	62916
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 1:23:52 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-55
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:40:00 AM
Lab ID: 2109E60-008G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.54	0.0011	0.0020		mg/L	1	10/1/2021 11:37:56 AM	B81725
Cadmium	ND	0.0012	0.0020		mg/L	1	9/30/2021 1:10:28 PM	A81703
Chromium	ND	0.0020	0.0060		mg/L	1	9/30/2021 1:10:28 PM	A81703
Iron	3.8	0.052	0.10	*	mg/L	5	10/1/2021 11:39:18 AM	B81725
Manganese	3.1	0.0029	0.010	*	mg/L	5	10/1/2021 11:39:18 AM	B81725
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 1:10:28 PM	A81703
Zinc	0.12	0.0060	0.010		mg/L	1	10/1/2021 11:37:56 AM	B81725
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0084	0.00012	0.0010		mg/L	1	10/1/2021 3:53:51 PM	B81743
Copper	ND	0.00037	0.0010		mg/L	1	10/1/2021 3:53:51 PM	B81743
Lead	ND	0.000057	0.00050		mg/L	1	10/1/2021 3:53:51 PM	B81743
Selenium	ND	0.00034	0.0010		mg/L	1	10/1/2021 3:53:51 PM	B81743

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:55:00 AM
Lab ID: 2109E60-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.45	2.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
Toluene	ND	0.40	2.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
Ethylbenzene	ND	0.43	2.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
Methyl tert-butyl ether (MTBE)	130	0.79	2.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
1,2,4-Trimethylbenzene	ND	0.24	2.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
1,3,5-Trimethylbenzene	ND	0.36	2.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
1,2-Dichloroethane (EDC)	1.0	0.51	2.0	J	µg/L	2	9/29/2021 6:28:04 PM	R81695
Naphthalene	ND	1.0	4.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
1-Methylnaphthalene	ND	1.7	8.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
2-Methylnaphthalene	ND	1.4	8.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
Acetone	ND	5.0	20		µg/L	2	9/29/2021 6:28:04 PM	R81695
2-Butanone	ND	4.1	20		µg/L	2	9/29/2021 6:28:04 PM	R81695
Chloroethane	1.0	0.75	4.0	J	µg/L	2	9/29/2021 6:28:04 PM	R81695
1,1-Dichloroethane	ND	0.55	2.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
Isopropylbenzene	ND	0.37	2.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
Methylene Chloride	2.5	1.0	6.0	J	µg/L	2	9/29/2021 6:28:04 PM	R81695
n-Butylbenzene	ND	0.51	6.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
n-Propylbenzene	ND	0.36	2.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
sec-Butylbenzene	ND	0.29	2.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
Xylenes, Total	ND	0.74	3.0		µg/L	2	9/29/2021 6:28:04 PM	R81695
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	2	9/29/2021 6:28:04 PM	R81695
Surr: 4-Bromofluorobenzene	96.6	0	70-130		%Rec	2	9/29/2021 6:28:04 PM	R81695
Surr: Dibromofluoromethane	104	0	70-130		%Rec	2	9/29/2021 6:28:04 PM	R81695
Surr: Toluene-d8	103	0	70-130		%Rec	2	9/29/2021 6:28:04 PM	R81695
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.024	0.10		mg/L	2	9/29/2021 6:28:04 PM	R81695
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	2	9/29/2021 6:28:04 PM	R81695

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:55:00 AM
Lab ID: 2109E60-009B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	10/5/2021 9:09:54 PM	63034

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:55:00 AM
Lab ID: 2109E60-009C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.038	0.016	0.064	J	mg/L	1	10/4/2021 5:06:52 PM	62874
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/4/2021 5:06:52 PM	62874
Surr: DNOP	104	0	15-142		%Rec	1	10/4/2021 5:06:52 PM	62874

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:55:00 AM
Lab ID: 2109E60-009E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.31	0.20	0.50	J	mg/L	5	9/28/2021 6:33:25 PM	R81640
Chloride	36	1.2	2.5		mg/L	5	9/28/2021 6:33:25 PM	R81640
Bromide	0.49	0.25	0.50	J	mg/L	5	9/28/2021 6:33:25 PM	R81640
Sulfate	170	1.2	2.5		mg/L	5	9/28/2021 6:33:25 PM	R81640
Nitrate+Nitrite as N	ND	0.040	1.0		mg/L	5	9/29/2021 1:58:09 AM	R81640

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:55:00 AM
Lab ID: 2109E60-009F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.019	0.0016	0.0030		mg/L	1	9/30/2021 11:37:58 AM	62916
Cadmium	ND	0.0015	0.0020		mg/L	1	9/30/2021 11:37:58 AM	62916
Chromium	ND	0.0021	0.0060		mg/L	1	9/30/2021 11:37:58 AM	62916
Iron	ND	0.013	0.050		mg/L	1	9/30/2021 11:37:58 AM	62916
Manganese	0.028	0.00081	0.0020		mg/L	1	9/30/2021 11:37:58 AM	62916
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 11:37:58 AM	62916
Zinc	ND	0.0064	0.010		mg/L	1	9/30/2021 11:37:58 AM	62916
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.00072	0.00013	0.0010	J	mg/L	1	9/30/2021 6:09:56 PM	62916
Copper	ND	0.00040	0.0010		mg/L	1	9/30/2021 6:09:56 PM	62916
Lead	ND	0.000061	0.00050		mg/L	1	9/30/2021 6:09:56 PM	62916
Selenium	ND	0.00037	0.0010		mg/L	1	9/30/2021 6:09:56 PM	62916
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 1:31:08 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-13
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 10:55:00 AM
Lab ID: 2109E60-009G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.019	0.0011	0.0020		mg/L	1	10/1/2021 11:40:41 AM	B81725
Cadmium	ND	0.0012	0.0020		mg/L	1	9/30/2021 1:20:45 PM	A81703
Chromium	ND	0.0020	0.0060		mg/L	1	9/30/2021 1:20:45 PM	A81703
Iron	ND	0.010	0.020		mg/L	1	9/30/2021 1:20:45 PM	A81703
Manganese	0.025	0.00058	0.0020		mg/L	1	10/1/2021 11:40:41 AM	B81725
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 1:20:45 PM	A81703
Zinc	0.017	0.0060	0.010		mg/L	1	10/1/2021 11:40:41 AM	B81725
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00081	0.00012	0.0010	J	mg/L	1	10/1/2021 4:08:07 PM	B81743
Copper	ND	0.00037	0.0010		mg/L	1	10/1/2021 4:08:07 PM	B81743
Lead	ND	0.000057	0.00050		mg/L	1	10/1/2021 4:08:07 PM	B81743
Selenium	ND	0.00034	0.0010		mg/L	1	10/1/2021 4:08:07 PM	B81743

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:15:00 AM
Lab ID: 2109E60-010A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	12	2.3	10		µg/L	10	9/29/2021 6:56:41 PM	R81695
Toluene	ND	2.0	10		µg/L	10	9/29/2021 6:56:41 PM	R81695
Ethylbenzene	ND	2.1	10		µg/L	10	9/29/2021 6:56:41 PM	R81695
Methyl tert-butyl ether (MTBE)	44	3.9	10		µg/L	10	9/29/2021 6:56:41 PM	R81695
1,2,4-Trimethylbenzene	ND	1.2	10		µg/L	10	9/29/2021 6:56:41 PM	R81695
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	9/29/2021 6:56:41 PM	R81695
1,2-Dichloroethane (EDC)	13	2.5	10		µg/L	10	9/29/2021 6:56:41 PM	R81695
Acetone	25	25	100	J	µg/L	10	9/29/2021 6:56:41 PM	R81695
2-Butanone	ND	20	100		µg/L	10	9/29/2021 6:56:41 PM	R81695
Chloroethane	4.4	3.8	20	J	µg/L	10	9/29/2021 6:56:41 PM	R81695
1,1-Dichloroethane	ND	2.7	10		µg/L	10	9/29/2021 6:56:41 PM	R81695
Isopropylbenzene	ND	1.8	10		µg/L	10	9/29/2021 6:56:41 PM	R81695
4-Isopropyltoluene	ND	2.0	10		µg/L	10	9/29/2021 6:56:41 PM	R81695
Methylene Chloride	21	5.0	30	J	µg/L	10	9/29/2021 6:56:41 PM	R81695
n-Butylbenzene	ND	2.5	30		µg/L	10	9/29/2021 6:56:41 PM	R81695
n-Propylbenzene	ND	1.8	10		µg/L	10	9/29/2021 6:56:41 PM	R81695
sec-Butylbenzene	ND	1.4	10		µg/L	10	9/29/2021 6:56:41 PM	R81695
tert-Butylbenzene	ND	2.4	10		µg/L	10	9/29/2021 6:56:41 PM	R81695
Xylenes, Total	ND	3.7	15		µg/L	10	9/29/2021 6:56:41 PM	R81695
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	10	9/29/2021 6:56:41 PM	R81695
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	10	9/29/2021 6:56:41 PM	R81695
Surr: Dibromofluoromethane	100	0	70-130		%Rec	10	9/29/2021 6:56:41 PM	R81695
Surr: Toluene-d8	103	0	70-130		%Rec	10	9/29/2021 6:56:41 PM	R81695
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	1.2	0.12	0.50		mg/L	10	9/29/2021 6:56:41 PM	R81695
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	10	9/29/2021 6:56:41 PM	R81695

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:15:00 AM
Lab ID: 2109E60-010B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	10/5/2021 9:25:02 PM	63034

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:15:00 AM
Lab ID: 2109E60-010C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.0	0.016	0.064		mg/L	1	10/4/2021 5:30:41 PM	62874
Motor Oil Range Organics (MRO)	0.19	0.052	0.080		mg/L	1	10/4/2021 5:30:41 PM	62874
Surr: DNOP	97.1	0	15-142		%Rec	1	10/4/2021 5:30:41 PM	62874

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:15:00 AM
Lab ID: 2109E60-010D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.2	23	D	µg/L	1	10/4/2021 10:12:32 PM	62912
Bis(2-ethylhexyl)phthalate	ND	5.1	11	D	µg/L	1	10/4/2021 10:12:32 PM	62912
Carbazole	ND	0.65	5.7	D	µg/L	1	10/4/2021 10:12:32 PM	62912
Di-n-octyl phthalate	ND	3.6	23	D	µg/L	1	10/4/2021 10:12:32 PM	62912
Dibenzofuran	ND	0.43	5.7	D	µg/L	1	10/4/2021 10:12:32 PM	62912
Dimethyl phthalate	ND	2.3	11	D	µg/L	1	10/4/2021 10:12:32 PM	62912
2,4-Dimethylphenol	ND	1.1	5.7	D	µg/L	1	10/4/2021 10:12:32 PM	62912
2-Methylphenol	ND	0.59	5.7	D	µg/L	1	10/4/2021 10:12:32 PM	62912
3+4-Methylphenol	ND	0.52	5.7	D	µg/L	1	10/4/2021 10:12:32 PM	62912
Phenol	ND	0.37	5.7	D	µg/L	1	10/4/2021 10:12:32 PM	62912
Surr: 2-Fluorophenol	46.6	0	15-87	D	%Rec	1	10/4/2021 10:12:32 PM	62912
Surr: Phenol-d5	36.7	0	15-67.5	D	%Rec	1	10/4/2021 10:12:32 PM	62912
Surr: 2,4,6-Tribromophenol	80.5	0	15-122	D	%Rec	1	10/4/2021 10:12:32 PM	62912
Surr: Nitrobenzene-d5	58.8	0	15-103	D	%Rec	1	10/4/2021 10:12:32 PM	62912
Surr: 2-Fluorobiphenyl	57.3	0	15-103	D	%Rec	1	10/4/2021 10:12:32 PM	62912
Surr: 4-Terphenyl-d14	97.3	0	45-137	D	%Rec	1	10/4/2021 10:12:32 PM	62912
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.54	0.048	1.0	J	µg/L	1	10/7/2021 2:26:00 PM	62858
Naphthalene	0.14	0.034	0.10		µg/L	1	10/7/2021 2:26:00 PM	62858
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	10/7/2021 2:26:00 PM	62858
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	10/7/2021 2:26:00 PM	62858
Acenaphthene	ND	0.031	0.10		µg/L	1	10/7/2021 2:26:00 PM	62858
Fluorene	ND	0.031	0.10		µg/L	1	10/7/2021 2:26:00 PM	62858
Phenanthrene	ND	0.057	0.10		µg/L	1	10/7/2021 2:26:00 PM	62858
Fluoranthene	ND	0.10	0.20		µg/L	1	10/7/2021 2:26:00 PM	62858
Pyrene	ND	0.16	0.20		µg/L	1	10/7/2021 2:26:00 PM	62858
Surr: Nitrobenzene-d5	72.5	0	21.9-89.8		%Rec	1	10/7/2021 2:26:00 PM	62858
Surr: 2-Fluorobiphenyl	49.0	0	15-84.5		%Rec	1	10/7/2021 2:26:00 PM	62858
Surr: 4-Terphenyl-d14	87.0	0	73.1-152		%Rec	1	10/7/2021 2:26:00 PM	62858

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:15:00 AM
Lab ID: 2109E60-010E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.20	0.50		mg/L	5	9/28/2021 6:58:07 PM	R81640
Chloride	540	12	25	*	mg/L	50	9/30/2021 3:48:01 PM	R81712
Sulfate	12	1.2	2.5		mg/L	5	9/28/2021 6:58:07 PM	R81640
Nitrate+Nitrite as N	0.066	0.040	1.0	J	mg/L	5	9/29/2021 2:10:29 AM	R81640

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:15:00 AM
Lab ID: 2109E60-010F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.46	0.0016	0.0030		mg/L	1	9/30/2021 11:41:18 AM	62916
Cadmium	ND	0.0015	0.0020		mg/L	1	9/30/2021 11:41:18 AM	62916
Chromium	ND	0.0021	0.0060		mg/L	1	9/30/2021 11:41:18 AM	62916
Iron	1.1	0.064	0.25	*	mg/L	5	9/30/2021 11:42:46 AM	62916
Manganese	0.28	0.00081	0.0020	*	mg/L	1	9/30/2021 11:41:18 AM	62916
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 11:41:18 AM	62916
Zinc	ND	0.0064	0.010		mg/L	1	9/30/2021 11:41:18 AM	62916
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0044	0.00013	0.0010		mg/L	1	9/30/2021 6:12:21 PM	62916
Copper	0.0067	0.00040	0.0010		mg/L	1	9/30/2021 6:12:21 PM	62916
Lead	0.00094	0.000061	0.00050		mg/L	1	9/30/2021 6:12:21 PM	62916
Selenium	0.0011	0.00037	0.0010		mg/L	1	9/30/2021 6:12:21 PM	62916
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 1:33:35 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:15:00 AM
Lab ID: 2109E60-010G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.45	0.0011	0.0020		mg/L	1	10/1/2021 11:47:11 AM	B81725
Cadmium	ND	0.0012	0.0020		mg/L	1	9/30/2021 1:24:00 PM	A81703
Chromium	ND	0.0020	0.0060		mg/L	1	9/30/2021 1:24:00 PM	A81703
Iron	0.17	0.010	0.020		mg/L	1	10/1/2021 11:47:11 AM	B81725
Manganese	0.27	0.00058	0.0020	*	mg/L	1	10/1/2021 11:47:11 AM	B81725
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 1:24:00 PM	A81703
Zinc	0.013	0.0060	0.010		mg/L	1	10/1/2021 11:47:11 AM	B81725
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0039	0.00012	0.0010		mg/L	1	10/1/2021 4:12:51 PM	B81743
Copper	0.0039	0.00037	0.0010		mg/L	1	10/5/2021 3:19:55 PM	B81815
Lead	0.00023	0.000057	0.00050	J	mg/L	1	10/1/2021 4:12:51 PM	B81743
Selenium	0.0012	0.00034	0.0010		mg/L	1	10/5/2021 3:19:55 PM	B81815

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:30:00 AM
Lab ID: 2109E60-011A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	17	1.1	5.0		µg/L	5	9/30/2021 4:14:04 PM	R81729
Toluene	ND	1.0	5.0		µg/L	5	9/30/2021 4:14:04 PM	R81729
Ethylbenzene	10	1.1	5.0		µg/L	5	9/30/2021 4:14:04 PM	R81729
Methyl tert-butyl ether (MTBE)	1700	20	50		µg/L	50	9/29/2021 7:25:21 PM	R81695
1,2,4-Trimethylbenzene	3.6	0.61	5.0	J	µg/L	5	9/30/2021 4:14:04 PM	R81729
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	9/30/2021 4:14:04 PM	R81729
1,2-Dichloroethane (EDC)	1.7	1.3	5.0	J	µg/L	5	9/30/2021 4:14:04 PM	R81729
Acetone	ND	13	50		µg/L	5	9/30/2021 4:14:04 PM	R81729
2-Butanone	ND	10	50		µg/L	5	9/30/2021 4:14:04 PM	R81729
Chloroethane	7.1	1.9	10	J	µg/L	5	9/30/2021 4:14:04 PM	R81729
1,1-Dichloroethane	ND	1.4	5.0		µg/L	5	9/30/2021 4:14:04 PM	R81729
Isopropylbenzene	ND	0.91	5.0		µg/L	5	9/30/2021 4:14:04 PM	R81729
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	9/30/2021 4:14:04 PM	R81729
Methylene Chloride	11	2.5	15	J	µg/L	5	9/30/2021 4:14:04 PM	R81729
n-Butylbenzene	ND	1.3	15		µg/L	5	9/30/2021 4:14:04 PM	R81729
n-Propylbenzene	ND	0.91	5.0		µg/L	5	9/30/2021 4:14:04 PM	R81729
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	9/30/2021 4:14:04 PM	R81729
tert-Butylbenzene	ND	1.2	5.0		µg/L	5	9/30/2021 4:14:04 PM	R81729
Xylenes, Total	ND	1.9	7.5		µg/L	5	9/30/2021 4:14:04 PM	R81729
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%Rec	5	9/30/2021 4:14:04 PM	R81729
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	5	9/30/2021 4:14:04 PM	R81729
Surr: Dibromofluoromethane	99.6	0	70-130		%Rec	5	9/30/2021 4:14:04 PM	R81729
Surr: Toluene-d8	105	0	70-130		%Rec	5	9/30/2021 4:14:04 PM	R81729
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.43	0.061	0.25		mg/L	5	9/30/2021 4:14:04 PM	G81729
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	5	9/30/2021 4:14:04 PM	G81729

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:30:00 AM
Lab ID: 2109E60-011B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0092		µg/L	1	10/5/2021 9:40:08 PM	63034

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:30:00 AM
Lab ID: 2109E60-011C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.2	0.016	0.064		mg/L	1	10/4/2021 5:54:32 PM	62874
Motor Oil Range Organics (MRO)	0.25	0.052	0.080		mg/L	1	10/4/2021 5:54:32 PM	62874
Surr: DNOP	101	0	15-142		%Rec	1	10/4/2021 5:54:32 PM	62874

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:30:00 AM
Lab ID: 2109E60-011D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20	D	µg/L	1	10/5/2021 3:02:57 AM	62930
Bis(2-ethylhexyl)phthalate	ND	4.5	10	D	µg/L	1	10/5/2021 3:02:57 AM	62930
Carbazole	ND	0.56	5.0	D	µg/L	1	10/5/2021 3:02:57 AM	62930
Di-n-octyl phthalate	ND	3.1	20	D	µg/L	1	10/5/2021 3:02:57 AM	62930
Dibenzofuran	ND	0.38	5.0	D	µg/L	1	10/5/2021 3:02:57 AM	62930
Dimethyl phthalate	ND	2.0	10	D	µg/L	1	10/5/2021 3:02:57 AM	62930
2,4-Dimethylphenol	ND	0.97	5.0	D	µg/L	1	10/5/2021 3:02:57 AM	62930
2-Methylphenol	ND	0.51	5.0	D	µg/L	1	10/5/2021 3:02:57 AM	62930
3+4-Methylphenol	ND	0.45	5.0	D	µg/L	1	10/5/2021 3:02:57 AM	62930
Phenol	1.1	0.33	5.0	JD	µg/L	1	10/5/2021 3:02:57 AM	62930
Surr: 2-Fluorophenol	39.2	0	15-87	D	%Rec	1	10/5/2021 3:02:57 AM	62930
Surr: Phenol-d5	31.9	0	15-67.5	D	%Rec	1	10/5/2021 3:02:57 AM	62930
Surr: 2,4,6-Tribromophenol	59.0	0	15-122	D	%Rec	1	10/5/2021 3:02:57 AM	62930
Surr: Nitrobenzene-d5	47.3	0	15-103	D	%Rec	1	10/5/2021 3:02:57 AM	62930
Surr: 2-Fluorobiphenyl	48.4	0	15-103	D	%Rec	1	10/5/2021 3:02:57 AM	62930
Surr: 4-Terphenyl-d14	81.3	0	45-137	D	%Rec	1	10/5/2021 3:02:57 AM	62930
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.66	0.048	1.0	J	µg/L	1	10/7/2021 3:09:00 PM	62858
Naphthalene	0.18	0.034	0.10		µg/L	1	10/7/2021 3:09:00 PM	62858
1-Methylnaphthalene	0.22	0.024	0.10		µg/L	1	10/7/2021 3:09:00 PM	62858
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	10/7/2021 3:09:00 PM	62858
Acenaphthene	ND	0.031	0.10		µg/L	1	10/7/2021 3:09:00 PM	62858
Fluorene	ND	0.031	0.10		µg/L	1	10/7/2021 3:09:00 PM	62858
Phenanthrene	ND	0.057	0.10		µg/L	1	10/7/2021 3:09:00 PM	62858
Fluoranthene	ND	0.10	0.20		µg/L	1	10/7/2021 3:09:00 PM	62858
Pyrene	0.20	0.16	0.20		µg/L	1	10/7/2021 3:09:00 PM	62858
Surr: Nitrobenzene-d5	77.5	0	21.9-89.8		%Rec	1	10/7/2021 3:09:00 PM	62858
Surr: 2-Fluorobiphenyl	53.5	0	15-84.5		%Rec	1	10/7/2021 3:09:00 PM	62858
Surr: 4-Terphenyl-d14	79.0	0	73.1-152		%Rec	1	10/7/2021 3:09:00 PM	62858

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:30:00 AM
Lab ID: 2109E60-011E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.26	0.20	0.50	J	mg/L	5	9/28/2021 7:22:49 PM	R81640
Chloride	160	5.0	10		mg/L	20	9/28/2021 7:35:10 PM	R81640
Sulfate	26	1.2	2.5		mg/L	5	9/28/2021 7:22:49 PM	R81640
Nitrate+Nitrite as N	ND	0.040	1.0		mg/L	5	9/29/2021 2:22:49 AM	R81640

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:30:00 AM
Lab ID: 2109E60-011F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.18	0.0016	0.0030		mg/L	1	9/30/2021 11:44:21 AM	62916
Cadmium	ND	0.0015	0.0020		mg/L	1	9/30/2021 11:44:21 AM	62916
Chromium	ND	0.0021	0.0060		mg/L	1	9/30/2021 11:44:21 AM	62916
Iron	0.79	0.013	0.050	*	mg/L	1	9/30/2021 11:44:21 AM	62916
Manganese	1.5	0.0041	0.010	*	mg/L	5	9/30/2021 11:45:40 AM	62916
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 11:44:21 AM	62916
Zinc	0.0085	0.0064	0.010	J	mg/L	1	9/30/2021 11:44:21 AM	62916
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0071	0.00013	0.0010		mg/L	1	9/30/2021 6:14:46 PM	62916
Copper	0.0047	0.00040	0.0010		mg/L	1	9/30/2021 6:14:46 PM	62916
Lead	0.011	0.000061	0.00050		mg/L	1	9/30/2021 6:14:46 PM	62916
Selenium	0.00041	0.00037	0.0010	J	mg/L	1	9/30/2021 6:14:46 PM	62916
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 1:36:01 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-54
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021 11:30:00 AM
Lab ID: 2109E60-011G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.17	0.0011	0.0020		mg/L	1	10/1/2021 11:48:49 AM	B81725
Cadmium	ND	0.0012	0.0020		mg/L	1	9/30/2021 1:27:16 PM	A81703
Chromium	ND	0.0020	0.0060		mg/L	1	9/30/2021 1:27:16 PM	A81703
Iron	0.35	0.010	0.020	*	mg/L	1	10/1/2021 11:48:49 AM	B81725
Manganese	1.4	0.0029	0.010	*	mg/L	5	10/1/2021 11:50:28 AM	B81725
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 1:27:16 PM	A81703
Zinc	0.026	0.0060	0.010		mg/L	1	10/1/2021 11:48:49 AM	B81725
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0082	0.00012	0.0010		mg/L	1	10/1/2021 4:17:36 PM	B81743
Copper	0.00087	0.00037	0.0010	J	mg/L	1	10/1/2021 4:17:36 PM	B81743
Lead	0.010	0.000057	0.00050		mg/L	1	10/1/2021 4:17:36 PM	B81743
Selenium	ND	0.00034	0.0010		mg/L	1	10/1/2021 4:17:36 PM	B81743

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021
Lab ID: 2109E60-012A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
Toluene	ND	0.20	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
Methyl tert-butyl ether (MTBE)	140	0.39	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
1,2-Dichloroethane (EDC)	0.80	0.25	1.0	J	µg/L	1	9/30/2021 4:42:43 PM	R81729
Naphthalene	ND	0.50	2.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
Acetone	ND	2.5	10		µg/L	1	9/30/2021 4:42:43 PM	R81729
Bromomethane	ND	0.85	3.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
2-Butanone	ND	2.0	10		µg/L	1	9/30/2021 4:42:43 PM	R81729
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
Chloroethane	0.87	0.38	2.0	J	µg/L	1	9/30/2021 4:42:43 PM	R81729
Chloroform	ND	0.13	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
Chloromethane	ND	0.41	3.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
2-Hexanone	ND	1.8	10		µg/L	1	9/30/2021 4:42:43 PM	R81729
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/30/2021 4:42:43 PM	R81729
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
Styrene	ND	0.14	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/30/2021 4:42:43 PM	R81729
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/30/2021 4:42:43 PM	R81729

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021
Lab ID: 2109E60-012A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Surr: 1,2-Dichloroethane-d4	116	0	70-130		%Rec	1	9/30/2021 4:42:43 PM	R81729
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	9/30/2021 4:42:43 PM	R81729
Surr: Dibromofluoromethane	105	0	70-130		%Rec	1	9/30/2021 4:42:43 PM	R81729
Surr: Toluene-d8	106	0	70-130		%Rec	1	9/30/2021 4:42:43 PM	R81729
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/30/2021 4:42:43 PM	G81729
Surr: 4-Bromofluorobenzene	109	0	70-130		%Rec	1	9/30/2021 4:42:43 PM	G81729

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021
Lab ID: 2109E60-012B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	10/5/2021 10:10:27 PM	63034

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021
Lab ID: 2109E60-012C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.032	0.016	0.064	J	mg/L	1	10/4/2021 6:18:19 PM	62874
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	10/4/2021 6:18:19 PM	62874
Surr: DNOP	99.3	0	15-142		%Rec	1	10/4/2021 6:18:19 PM	62874

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021
Lab ID: 2109E60-012E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.31	0.20	0.50	J	mg/L	5	9/28/2021 7:47:32 PM	R81640
Chloride	36	1.2	2.5		mg/L	5	9/28/2021 7:47:32 PM	R81640
Bromide	0.50	0.25	0.50	J	mg/L	5	9/28/2021 7:47:32 PM	R81640
Sulfate	160	1.2	2.5		mg/L	5	9/28/2021 7:47:32 PM	R81640
Nitrate+Nitrite as N	ND	0.040	1.0		mg/L	5	9/29/2021 2:35:15 AM	R81640

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021
Lab ID: 2109E60-012F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.018	0.0016	0.0030		mg/L	1	9/30/2021 11:52:35 AM	62916
Cadmium	ND	0.0015	0.0020		mg/L	1	9/30/2021 11:52:35 AM	62916
Chromium	ND	0.0021	0.0060		mg/L	1	9/30/2021 11:52:35 AM	62916
Iron	ND	0.013	0.050		mg/L	1	9/30/2021 11:52:35 AM	62916
Manganese	0.028	0.00081	0.0020		mg/L	1	9/30/2021 11:52:35 AM	62916
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 11:52:35 AM	62916
Zinc	ND	0.0064	0.010		mg/L	1	9/30/2021 11:52:35 AM	62916
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.00075	0.00013	0.0010	J	mg/L	1	9/30/2021 6:17:12 PM	62916
Copper	ND	0.00040	0.0010		mg/L	1	9/30/2021 6:17:12 PM	62916
Lead	ND	0.000061	0.00050		mg/L	1	9/30/2021 6:17:12 PM	62916
Selenium	ND	0.00037	0.0010		mg/L	1	9/30/2021 6:17:12 PM	62916
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	10/6/2021 1:38:28 PM	63050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109E60**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-24-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/24/2021
Lab ID: 2109E60-012G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.019	0.0011	0.0020		mg/L	1	10/1/2021 11:52:04 AM	B81725
Cadmium	ND	0.0012	0.0020		mg/L	1	9/30/2021 1:30:33 PM	A81703
Chromium	ND	0.0020	0.0060		mg/L	1	9/30/2021 1:30:33 PM	A81703
Iron	ND	0.010	0.020		mg/L	1	9/30/2021 1:30:33 PM	A81703
Manganese	0.024	0.00058	0.0020		mg/L	1	10/1/2021 11:52:04 AM	B81725
Silver	ND	0.0013	0.0050		mg/L	1	9/30/2021 1:30:33 PM	A81703
Zinc	0.0066	0.0060	0.010	J	mg/L	1	10/1/2021 11:52:04 AM	B81725
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00071	0.00012	0.0010	J	mg/L	1	10/1/2021 4:22:20 PM	B81743
Copper	ND	0.00037	0.0010		mg/L	1	10/1/2021 4:22:20 PM	B81743
Lead	ND	0.000057	0.00050		mg/L	1	10/1/2021 4:22:20 PM	B81743
Selenium	ND	0.00034	0.0010		mg/L	1	10/1/2021 4:22:20 PM	B81743

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62916** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **62916** RunNo: **81703**
Prep Date: **9/29/2021** Analysis Date: **9/30/2021** SeqNo: **2888061** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS-62916** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **62916** RunNo: **81703**
Prep Date: **9/29/2021** Analysis Date: **9/30/2021** SeqNo: **2888062** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0012	0.0030	0.002000	0	62.0	50	150			J
Cadmium	0.0021	0.0020	0.002000	0	107	50	150			
Chromium	0.0063	0.0060	0.006000	0	104	50	150			
Iron	0.022	0.050	0.02000	0	108	50	150			J
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Silver	0.0055	0.0050	0.005000	0	110	50	150			
Zinc	0.0083	0.010	0.01000	0	83.5	50	150			J

Sample ID: **LCS-62916** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **62916** RunNo: **81703**
Prep Date: **9/29/2021** Analysis Date: **9/30/2021** SeqNo: **2888063** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	97.3	85	115			
Cadmium	0.48	0.0020	0.5000	0	97.0	85	115			
Chromium	0.48	0.0060	0.5000	0	96.5	85	115			
Iron	0.48	0.050	0.5000	0	96.2	85	115			
Manganese	0.47	0.0020	0.5000	0	94.7	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Zinc	0.46	0.010	0.5000	0	91.9	85	115			

Sample ID: **2109E60-001FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-09-24-21** Batch ID: **62916** RunNo: **81703**
Prep Date: **9/29/2021** Analysis Date: **9/30/2021** SeqNo: **2888081** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0030	0.5000	0	95.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2109E60-001FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-09-24-21** Batch ID: **62916** RunNo: **81703**
Prep Date: **9/29/2021** Analysis Date: **9/30/2021** SeqNo: **2888081** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.48	0.0020	0.5000	0	96.0	70	130			
Chromium	0.46	0.0060	0.5000	0	93.0	70	130			
Iron	0.46	0.050	0.5000	0	93.0	70	130			
Manganese	0.48	0.0020	0.5000	0	96.0	70	130			
Silver	0.10	0.0050	0.1000	0	100	70	130			
Zinc	0.46	0.010	0.5000	0	92.0	70	130			

Sample ID: **2109E60-001FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **EB-09-24-21** Batch ID: **62916** RunNo: **81703**
Prep Date: **9/29/2021** Analysis Date: **9/30/2021** SeqNo: **2888082** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	97.8	70	130	2.69	20	
Cadmium	0.49	0.0020	0.5000	0	98.0	70	130	2.05	20	
Chromium	0.48	0.0060	0.5000	0	95.4	70	130	2.61	20	
Iron	0.47	0.050	0.5000	0	93.8	70	130	0.857	20	
Manganese	0.49	0.0020	0.5000	0	97.9	70	130	1.96	20	
Silver	0.10	0.0050	0.1000	0	102	70	130	1.82	20	
Zinc	0.48	0.010	0.5000	0	95.6	70	130	3.83	20	

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A81725** RunNo: **81725**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2889367** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0030	0.5000	0	102	85	115			
Iron	0.50	0.050	0.5000	0	99.2	85	115			
Manganese	0.49	0.0020	0.5000	0	98.5	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A81725** RunNo: **81725**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2889385** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Iron	ND	0.050								
Manganese	ND	0.0020								
Zinc	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**

03-Nov-21

Client: Marathon

Project: 2021 GW Sampling 3rd Quarter

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **A81725**	RunNo: **81725**
Prep Date:	Analysis Date: **10/1/2021**	SeqNo: **2889387** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	106	50	150			J
Iron	0.020	0.050	0.02000	0	101	50	150			J
Manganese	0.0021	0.0020	0.002000	0	107	50	150			
Zinc	0.0079	0.010	0.01000	0	79.2	50	150			J

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **B81725**	RunNo: **81725**
Prep Date:	Analysis Date: **10/1/2021**	SeqNo: **2890000** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Iron	ND	0.050								
Manganese	ND	0.0020								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **B81725**	RunNo: **81725**
Prep Date:	Analysis Date: **10/1/2021**	SeqNo: **2890002** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0013	0.0030	0.002000	0	66.0	50	150			J
Iron	0.022	0.050	0.02000	0	108	50	150			J
Manganese	0.0020	0.0020	0.002000	0	100	50	150			
Zinc	0.0087	0.010	0.01000	0	87.4	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **B81725**	RunNo: **81725**
Prep Date:	Analysis Date: **10/1/2021**	SeqNo: **2890004** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	100	85	115			
Iron	0.51	0.050	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.1	85	115			
Zinc	0.48	0.010	0.5000	0	96.1	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**

03-Nov-21

Client: Marathon

Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A81703**	RunNo: **81703**
Prep Date:	Analysis Date: **9/30/2021**	SeqNo: **2888064** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A81703**	RunNo: **81703**
Prep Date:	Analysis Date: **9/30/2021**	SeqNo: **2888065** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.0019	0.0020	0.002000	0	95.8	50	150			J
Chromium	0.0067	0.0060	0.006000	0	111	50	150			
Iron	0.021	0.020	0.02000	0	106	50	150			
Manganese	0.0020	0.0020	0.002000	0	100	50	150			
Silver	0.0052	0.0050	0.005000	0	104	50	150			
Zinc	0.0089	0.010	0.01000	0	89.5	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A81703**	RunNo: **81703**
Prep Date:	Analysis Date: **9/30/2021**	SeqNo: **2888066** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.49	0.0060	0.5000	0	98.6	85	115			
Iron	0.49	0.020	0.5000	0	98.7	85	115			
Manganese	0.49	0.0020	0.5000	0	98.9	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Zinc	0.48	0.010	0.5000	0	95.6	85	115			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A81725**	RunNo: **81725**
Prep Date:	Analysis Date: **10/1/2021**	SeqNo: **2889368** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Iron	0.50	0.020	0.5000	0	99.2	85	115			
Manganese	0.49	0.0020	0.5000	0	98.5	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**

03-Nov-21

Client: Marathon

Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2109E60-001GMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-09-24-21** Batch ID: **A81725** RunNo: **81725**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2889376** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	104	70	130			

Sample ID: **2109E60-001GMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-09-24-21** Batch ID: **A81725** RunNo: **81725**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2889377** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0020	0.5000	0	109	70	130	3.87	20	

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A81725** RunNo: **81725**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2889386** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Iron	ND	0.020								
Manganese	ND	0.0020								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A81725** RunNo: **81725**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2889388** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0020	0.002000	0	106	50	150			
Iron	0.020	0.020	0.02000	0	101	50	150			
Manganese	0.0021	0.0020	0.002000	0	107	50	150			
Zinc	0.0079	0.010	0.01000	0	79.2	50	150			J

Sample ID: **2109E60-004GMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **OW-50** Batch ID: **A81725** RunNo: **81725**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2889395** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.59	0.0020	0.5000	0.05397	107	70	130			
Manganese	0.62	0.0020	0.5000	0.1197	101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2109E60-004GMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **OW-50** Batch ID: **A81725** RunNo: **81725**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2889396** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.60	0.0020	0.5000	0.05397	108	70	130	1.16	20	
Manganese	0.64	0.0020	0.5000	0.1197	103	70	130	1.94	20	

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B81725** RunNo: **81725**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2890001** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Iron	ND	0.020								
Manganese	ND	0.0020								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B81725** RunNo: **81725**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2890003** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0013	0.0020	0.002000	0	66.0	50	150			J
Iron	0.022	0.020	0.02000	0	108	50	150			
Manganese	0.0020	0.0020	0.002000	0	100	50	150			
Zinc	0.0087	0.010	0.01000	0	87.4	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B81725** RunNo: **81725**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2890005** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.1	85	115			
Zinc	0.48	0.010	0.5000	0	96.1	85	115			

Sample ID: **2109E60-004GMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **OW-50** Batch ID: **B81725** RunNo: **81725**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2890017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.57	0.010	0.5000	0.09122	96.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2109E60-004GMSD**	SampType: **MSD**		TestCode: **EPA Method 200.7: Dissolved Metals**		
Client ID: **OW-50**	Batch ID: **B81725**		RunNo: **81725**		
Prep Date:	Analysis Date: **10/1/2021**		SeqNo: **2890018**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.57	0.010	0.5000	0.09122	95.6	70	130	0.557	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62916** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **62916** RunNo: **81711**
Prep Date: **9/29/2021** Analysis Date: **9/30/2021** SeqNo: **2888587** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	0.00053	0.0010								J
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **MSLLLCS-62916** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **62916** RunNo: **81711**
Prep Date: **9/29/2021** Analysis Date: **9/30/2021** SeqNo: **2888588** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00096	0.0010	0.001000	0	96.3	50	150			J
Copper	0.0012	0.0010	0.001000	0	121	50	150			
Lead	0.00047	0.00050	0.0005000	0	93.4	50	150			J
Selenium	0.00069	0.0010	0.001000	0	69.5	50	150			J

Sample ID: **MSLCS-62916** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **62916** RunNo: **81711**
Prep Date: **9/29/2021** Analysis Date: **9/30/2021** SeqNo: **2888589** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	96.6	85	115			
Copper	0.025	0.0010	0.02500	0	99.5	85	115			
Lead	0.012	0.00050	0.01250	0	95.8	85	115			
Selenium	0.024	0.0010	0.02500	0	94.1	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **B81743** RunNo: **81743**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2890273** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **B81743** RunNo: **81743**
Prep Date: Analysis Date: **10/1/2021** SeqNo: **2890274** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**

03-Nov-21

Client: Marathon

Project: 2021 GW Sampling 3rd Quarter

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**							
Client ID: **BatchQC**	Batch ID: **B81743**	RunNo: **81743**							
Prep Date:	Analysis Date: **10/1/2021**	SeqNo: **2890274**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	109	50	150			
Copper	0.0011	0.0010	0.001000	0	108	50	150			
Lead	0.00053	0.00050	0.0005000	0	106	50	150			
Selenium	0.00081	0.0010	0.001000	0	81.1	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **B81743**	RunNo: **81743**							
Prep Date:	Analysis Date: **10/1/2021**	SeqNo: **2890275**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Copper	0.026	0.0010	0.02500	0	104	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.027	0.0010	0.02500	0	107	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B81743**	RunNo: **81743**
Prep Date:	Analysis Date: **10/1/2021**	SeqNo: **2890276** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B81743**	RunNo: **81743**
Prep Date:	Analysis Date: **10/1/2021**	SeqNo: **2890277** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	109	50	150			
Copper	0.0011	0.0010	0.001000	0	108	50	150			
Lead	0.00053	0.00050	0.0005000	0	106	50	150			
Selenium	0.00081	0.0010	0.001000	0	81.1	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B81743**	RunNo: **81743**
Prep Date:	Analysis Date: **10/1/2021**	SeqNo: **2890278** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	103	85	115			
Copper	0.026	0.0010	0.02500	0	104	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.027	0.0010	0.02500	0	107	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **D81765**	RunNo: **81765**
Prep Date:	Analysis Date: **10/4/2021**	SeqNo: **2892044** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **D81765**	RunNo: **81765**
Prep Date:	Analysis Date: **10/4/2021**	SeqNo: **2892046** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **D81765**	RunNo: **81765**
Prep Date:	Analysis Date: **10/4/2021**	SeqNo: **2892046** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	105	85	115			
Copper	0.028	0.0010	0.02500	0	110	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.027	0.0010	0.02500	0	107	85	115			

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **D81765**	RunNo: **81765**
Prep Date:	Analysis Date: **10/4/2021**	SeqNo: **2892048** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	105	50	150			
Copper	0.0011	0.0010	0.001000	0	109	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.00095	0.0010	0.001000	0	95.0	50	150			J

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B81815**	RunNo: **81815**
Prep Date:	Analysis Date: **10/5/2021**	SeqNo: **2894272** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B81815**	RunNo: **81815**
Prep Date:	Analysis Date: **10/5/2021**	SeqNo: **2894283** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.0010	0.0010	0.001000	0	102	50	150			
Selenium	0.00061	0.0010	0.001000	0	61.0	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B81815**	RunNo: **81815**
Prep Date:	Analysis Date: **10/5/2021**	SeqNo: **2894284** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.025	0.0010	0.02500	0	101	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-63050**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **63050**	RunNo: **81839**
Prep Date: **10/5/2021**	Analysis Date: **10/6/2021**	SeqNo: **2895143** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-63050**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **63050**	RunNo: **81839**
Prep Date: **10/5/2021**	Analysis Date: **10/6/2021**	SeqNo: **2895144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00013	0.00020	0.0001500	0	90.0	50	150			J

Sample ID: **LCS-63050**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **63050**	RunNo: **81839**
Prep Date: **10/5/2021**	Analysis Date: **10/6/2021**	SeqNo: **2895145** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0045	0.00020	0.005000	0	89.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R81640**	RunNo: **81640**
Prep Date:	Analysis Date: **9/28/2021**	SeqNo: **2885389** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R81640**	RunNo: **81640**
Prep Date:	Analysis Date: **9/28/2021**	SeqNo: **2885390** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	100	90	110			
Chloride	4.9	0.50	5.000	0	97.4	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Sulfate	9.9	0.50	10.00	0	99.2	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	101	90	110			

Sample ID: **2109E60-001EMS**	SampType: **ms**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB-09-24-21**	Batch ID: **R81640**	RunNo: **81640**
Prep Date:	Analysis Date: **9/28/2021**	SeqNo: **2885392** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.5	73.3	111			
Chloride	4.8	0.50	5.000	0	95.1	84.2	117			
Bromide	2.4	0.10	2.500	0	97.5	85.9	106			
Sulfate	9.7	0.50	10.00	0	97.5	83.3	112			

Sample ID: **2109E60-001EMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB-09-24-21**	Batch ID: **R81640**	RunNo: **81640**
Prep Date:	Analysis Date: **9/28/2021**	SeqNo: **2885393** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	98.4	73.3	111	0.919	20	
Chloride	4.8	0.50	5.000	0	95.8	84.2	117	0.734	20	
Bromide	2.5	0.10	2.500	0	98.3	85.9	106	0.821	20	
Sulfate	9.9	0.50	10.00	0	98.5	83.3	112	1.09	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R81712**	RunNo: **81712**							
Prep Date:	Analysis Date: **9/30/2021**	SeqNo: **2888826**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R81712**	RunNo: **81712**							
Prep Date:	Analysis Date: **9/30/2021**	SeqNo: **2888827**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62897** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **62897** RunNo: **81675**
Prep Date: **9/29/2021** Analysis Date: **9/29/2021** SeqNo: **2887202** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-62897** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **62897** RunNo: **81675**
Prep Date: **9/29/2021** Analysis Date: **9/29/2021** SeqNo: **2887206** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-62897** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **62897** RunNo: **81675**
Prep Date: **9/29/2021** Analysis Date: **9/29/2021** SeqNo: **2887245** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.092	0.010	0.1000	0	92.2	70	130			

Sample ID: **LCSD-62897** SampType: **LCSD** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02** Batch ID: **62897** RunNo: **81675**
Prep Date: **9/29/2021** Analysis Date: **9/29/2021** SeqNo: **2887248** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	103	70	130	11.2	20	

Sample ID: **MB-63034** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **63034** RunNo: **81818**
Prep Date: **10/5/2021** Analysis Date: **10/5/2021** SeqNo: **2894374** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-63034** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **63034** RunNo: **81818**
Prep Date: **10/5/2021** Analysis Date: **10/5/2021** SeqNo: **2894375** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.091	0.010	0.1000	0	90.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-63034**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **63034**	RunNo: **81818**
Prep Date: **10/5/2021**	Analysis Date: **10/5/2021**	SeqNo: **2894405** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62868**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **62868**	RunNo: **81750**							
Prep Date: **9/28/2021**	Analysis Date: **10/1/2021**	SeqNo: **2890602**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.030	0.064								J
Motor Oil Range Organics (MRO)	0.061	0.080								J
Surr: DNOP	0.031		0.03750		83.8	15	142			

Sample ID: **LCS-62868**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **62868**	RunNo: **81750**							
Prep Date: **9/28/2021**	Analysis Date: **10/1/2021**	SeqNo: **2890603**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.087	0.064	0.1875	0	46.3	21.1	126			
Surr: DNOP	0.016		0.01875		84.1	15	142			

Sample ID: **LCSD-62868**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **62868**	RunNo: **81750**							
Prep Date: **9/28/2021**	Analysis Date: **10/1/2021**	SeqNo: **2890604**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.086	0.064	0.1875	0	45.9	21.1	126	0.794	20	
Surr: DNOP	0.017		0.01875		88.7	15	142	0	0	

Sample ID: **MB-62874**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **62874**	RunNo: **81794**							
Prep Date: **9/28/2021**	Analysis Date: **10/4/2021**	SeqNo: **2893090**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.042		0.03750		111	15	142			

Sample ID: **LCS-62874**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **62874**	RunNo: **81794**							
Prep Date: **9/28/2021**	Analysis Date: **10/4/2021**	SeqNo: **2893091**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.10	0.064	0.1875	0	53.8	21.1	126			
Surr: DNOP	0.018		0.01875		97.9	15	142			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**

03-Nov-21

Client: Marathon

Project: 2021 GW Sampling 3rd Quarter

Sample ID: **LCSD-62874** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **62874** RunNo: **81794**
Prep Date: **9/28/2021** Analysis Date: **10/4/2021** SeqNo: **2893092** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	57.1	21.1	126	6.08	20	
Surr: DNOP	0.020		0.01875		108	15	142	0	0	

Sample ID: **MB-62973** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **62973** RunNo: **81862**
Prep Date: **10/1/2021** Analysis Date: **10/8/2021** SeqNo: **2897863** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	0.040		0.03750		105	15	142			

Sample ID: **LCS-62973** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **62973** RunNo: **81862**
Prep Date: **10/1/2021** Analysis Date: **10/8/2021** SeqNo: **2897869** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	0.021		0.01875		113	15	142			

Sample ID: **LCSD-62973** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **62973** RunNo: **81862**
Prep Date: **10/1/2021** Analysis Date: **10/8/2021** SeqNo: **2897885** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	0.022		0.01875		119	15	142	0	0	

Sample ID: **LCSD-63355** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **63355** RunNo: **82155**
Prep Date: **10/18/2021** Analysis Date: **10/19/2021** SeqNo: **2911228** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	0.020		0.01875		106	15	142	0	0	

Sample ID: **LCS-63355** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **63355** RunNo: **82155**
Prep Date: **10/18/2021** Analysis Date: **10/19/2021** SeqNo: **2911230** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	0.019		0.01875		101	15	142			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-63355** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **63355** RunNo: **82155**
Prep Date: **10/18/2021** Analysis Date: **10/19/2021** SeqNo: **2911231** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	0.034		0.03750		91.0	15	142			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62901**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **62901**	RunNo: **81715**
Prep Date: **9/29/2021**	Analysis Date: **9/30/2021**	SeqNo: **2889000** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.38		0.5000		76.2	64.8	167			

Sample ID: **LCS-62901**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **62901**	RunNo: **81715**
Prep Date: **9/29/2021**	Analysis Date: **9/30/2021**	SeqNo: **2889011** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	1.9	1.0	2.500	0	78.0	73	138			
Surr: DNOP	0.20		0.2500		80.0	64.8	167			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R81662**	RunNo: **81662**
Prep Date:	Analysis Date: **9/28/2021**	SeqNo: **2886454** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	25	1.0	20.00	0	125	70	130			
Toluene	20	1.0	20.00	0	99.7	70	130			
Chlorobenzene	20	1.0	20.00	0	97.9	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	98.8	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		114	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81662**	RunNo: **81662**
Prep Date:	Analysis Date: **9/28/2021**	SeqNo: **2886476** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
2-Hexanone	ND	10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81662**	RunNo: **81662**
Prep Date:	Analysis Date: **9/28/2021**	SeqNo: **2886476** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		120	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R81695**	RunNo: **81695**
Prep Date:	Analysis Date: **9/29/2021**	SeqNo: **2887799** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	25	1.0	20.00	0	127	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		110	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81695**	RunNo: **81695**
Prep Date:	Analysis Date: **9/29/2021**	SeqNo: **2887821** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R81695** RunNo: **81695**
Prep Date: Analysis Date: **9/29/2021** SeqNo: **2887821** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
2-Butanone	ND	10								
Chloroethane	ND	2.0								
1,1-Dichloroethane	ND	1.0								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	11		10.00		107	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R81729** RunNo: **81729**
Prep Date: Analysis Date: **9/30/2021** SeqNo: **2889500** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	25	1.0	20.00	0	126	70	130			
Toluene	21	1.0	20.00	0	105	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	94.8	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		108	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R81729**	RunNo: **81729**	
Prep Date:	Analysis Date: **9/30/2021**	SeqNo: **2889516**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81729**	RunNo: **81729**
Prep Date:	Analysis Date: **9/30/2021**	SeqNo: **2889516** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		111	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.3	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb-62912**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **62912**	RunNo: **81778**
Prep Date: **9/29/2021**	Analysis Date: **10/4/2021**	SeqNo: **2892198** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	5.0								
Aniline	ND	5.0								
Anthracene	ND	5.0								
Benz(a)anthracene	ND	5.0								
Benzoic acid	ND	20								
Benzyl alcohol	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	10								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
Chrysene	ND	5.0								
Di-n-octyl phthalate	ND	20								
Dibenzofuran	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
Fluorene	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Naphthalene	ND	5.0								
Pentachlorophenol	ND	20								
Phenanthrene	ND	5.0								
Phenol	ND	5.0								
Pyrene	ND	5.0								
Pyridine	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	100		200.0		50.8	15	87			
Surr: Phenol-d5	81		200.0		40.4	15	67.5			
Surr: 2,4,6-Tribromophenol	150		200.0		73.0	15	122			
Surr: Nitrobenzene-d5	55		100.0		55.1	15	103			
Surr: 2-Fluorobiphenyl	58		100.0		57.8	15	103			
Surr: 4-Terphenyl-d14	120		100.0		120	45	137			

Sample ID: **lcs-62912**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **62912**	RunNo: **81778**
Prep Date: **9/29/2021**	Analysis Date: **10/4/2021**	SeqNo: **2892199** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	5.0	100.0	0	76.1	28	101			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **lcs-62912** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **62912** RunNo: **81778**
Prep Date: **9/29/2021** Analysis Date: **10/4/2021** SeqNo: **2892199** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	67	5.0	100.0	0	66.7	15	87.6			
Pentachlorophenol	170	20	200.0	0	85.3	21	111			
Phenol	110	5.0	200.0	0	53.2	16.8	70.5			
Pyrene	120	5.0	100.0	0	120	30.5	129			
Surr: 2-Fluorophenol	86		200.0		43.2	15	87			
Surr: Phenol-d5	69		200.0		34.4	15	67.5			
Surr: 2,4,6-Tribromophenol	130		200.0		63.2	15	122			
Surr: Nitrobenzene-d5	52		100.0		51.6	15	103			
Surr: 2-Fluorobiphenyl	54		100.0		54.1	15	103			
Surr: 4-Terphenyl-d14	120		100.0		123	45	137			

Sample ID: **lcsd-62912** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **62912** RunNo: **81778**
Prep Date: **9/29/2021** Analysis Date: **10/4/2021** SeqNo: **2892200** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	81	5.0	100.0	0	80.5	28	101	5.68	41.2	
1,4-Dichlorobenzene	72	5.0	100.0	0	72.2	15	87.6	7.94	30.4	
Pentachlorophenol	170	20	200.0	0	86.2	21	111	1.04	71.6	
Phenol	110	5.0	200.0	0	57.2	16.8	70.5	7.25	37.2	
Pyrene	120	5.0	100.0	0	119	30.5	129	1.48	51.3	
Surr: 2-Fluorophenol	92		200.0		46.1	15	87	0	0	
Surr: Phenol-d5	76		200.0		38.0	15	67.5	0	0	
Surr: 2,4,6-Tribromophenol	130		200.0		67.1	15	122	0	0	
Surr: Nitrobenzene-d5	57		100.0		57.1	15	103	0	0	
Surr: 2-Fluorobiphenyl	57		100.0		57.1	15	103	0	0	
Surr: 4-Terphenyl-d14	120		100.0		119	45	137	0	0	

Sample ID: **mb-62930** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **62930** RunNo: **81778**
Prep Date: **9/30/2021** Analysis Date: **10/5/2021** SeqNo: **2892215** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	ND	20								
Bis(2-ethylhexyl)phthalate	ND	10								
Carbazole	ND	5.0								
Di-n-octyl phthalate	ND	20								
Dibenzofuran	ND	5.0								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb-62930** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **62930** RunNo: **81778**
Prep Date: **9/30/2021** Analysis Date: **10/5/2021** SeqNo: **2892215** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Phenol	ND	5.0								
Surr: 2-Fluorophenol	110		200.0		55.1	15	87			
Surr: Phenol-d5	86		200.0		42.9	15	67.5			
Surr: 2,4,6-Tribromophenol	140		200.0		72.0	15	122			
Surr: Nitrobenzene-d5	63		100.0		63.1	15	103			
Surr: 2-Fluorobiphenyl	64		100.0		64.4	15	103			
Surr: 4-Terphenyl-d14	110		100.0		110	45	137			

Sample ID: **lcs-62930** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **62930** RunNo: **81778**
Prep Date: **9/30/2021** Analysis Date: **10/5/2021** SeqNo: **2892216** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenol	98	5.0	200.0	0	49.1	16.8	70.5			
Surr: 2-Fluorophenol	97		200.0		48.4	15	87			
Surr: Phenol-d5	74		200.0		37.1	15	67.5			
Surr: 2,4,6-Tribromophenol	130		200.0		66.7	15	122			
Surr: Nitrobenzene-d5	59		100.0		58.7	15	103			
Surr: 2-Fluorobiphenyl	58		100.0		57.9	15	103			
Surr: 4-Terphenyl-d14	110		100.0		110	45	137			

Sample ID: **lcsd-62930** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **62930** RunNo: **81778**
Prep Date: **9/30/2021** Analysis Date: **10/5/2021** SeqNo: **2892217** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenol	94	5.0	200.0	0	46.9	16.8	70.5	4.75	37.2	
Surr: 2-Fluorophenol	95		200.0		47.4	15	87	0	0	
Surr: Phenol-d5	72		200.0		36.2	15	67.5	0	0	
Surr: 2,4,6-Tribromophenol	120		200.0		60.5	15	122	0	0	
Surr: Nitrobenzene-d5	57		100.0		56.6	15	103	0	0	
Surr: 2-Fluorobiphenyl	62		100.0		61.7	15	103	0	0	
Surr: 4-Terphenyl-d14	100		100.0		105	45	137	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb-62858** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **62858** RunNo: **81719**
Prep Date: **9/27/2021** Analysis Date: **10/1/2021** SeqNo: **2889300** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Surr: Nitrobenzene-d5	2.3		4.000		58.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	4.4		8.000		54.8	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.8		4.000		45.5	15	84.5			
Surr: 4-Terphenyl-d14	3.6		4.000		90.0	73.1	152			

Sample ID: **lcs-62858** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **62858** RunNo: **81719**
Prep Date: **9/27/2021** Analysis Date: **10/1/2021** SeqNo: **2889301** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.60	0.10	2.000	0	30.0	15	79.8			
Naphthalene	0.94	0.10	2.000	0	47.0	26.5	90.9			
1-Methylnaphthalene	1.0	0.10	2.000	0	50.0	27.9	88.2			
2-Methylnaphthalene	0.98	0.10	2.000	0	49.0	29.2	87.5			
Acenaphthene	1.0	0.10	2.000	0	51.0	25.6	93.9			
Fluorene	1.0	0.10	2.000	0	51.0	27.4	95.1			
Phenanthrene	1.1	0.10	2.000	0	54.0	25.1	104			
Anthracene	1.2	0.10	2.000	0	60.0	30.1	100			
Fluoranthene	1.6	0.20	2.000	0	82.0	41.6	126			
Pyrene	1.6	0.20	2.000	0	78.0	34.5	112			
Benz(a)anthracene	1.9	0.10	2.000	0	95.0	43.9	132			
Chrysene	1.5	0.10	2.000	0	77.0	39.8	118			
Surr: Nitrobenzene-d5	3.2		5.000		64.4	21.9	89.8			
Surr: 2,4,6-Tribromophenol	5.5		10.00		55.0	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.4		5.000		48.4	15	84.5			
Surr: 4-Terphenyl-d14	4.9		5.000		97.2	73.1	152			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **lcsd-62858** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **62858** RunNo: **81719**
Prep Date: **9/27/2021** Analysis Date: **10/1/2021** SeqNo: **2889302** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.66	0.10	2.000	0	33.0	15	79.8	9.52	34.2	
Naphthalene	0.98	0.10	2.000	0	49.0	26.5	90.9	4.17	37.6	
1-Methylnaphthalene	1.0	0.10	2.000	0	52.0	27.9	88.2	3.92	33.1	
2-Methylnaphthalene	1.0	0.10	2.000	0	51.0	29.2	87.5	4.00	35.4	
Acenaphthene	1.1	0.10	2.000	0	54.0	25.6	93.9	5.71	36.3	
Fluorene	1.1	0.10	2.000	0	55.0	27.4	95.1	7.55	32.2	
Phenanthrene	1.2	0.10	2.000	0	59.0	25.1	104	8.85	32.9	
Anthracene	1.3	0.10	2.000	0	63.0	30.1	100	4.88	31.5	
Fluoranthene	1.6	0.20	2.000	0	81.0	41.6	126	1.23	26.5	
Pyrene	1.5	0.20	2.000	0	74.0	34.5	112	5.26	23.3	
Benz(a)anthracene	1.9	0.10	2.000	0	94.0	43.9	132	1.06	29.5	
Chrysene	1.6	0.10	2.000	0	80.0	39.8	118	3.82	22.3	
Surr: Nitrobenzene-d5	3.4		5.000		68.0	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	5.7		10.00		57.4	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	2.4		5.000		48.8	15	84.5	0	0	
Surr: 4-Terphenyl-d14	4.9		5.000		98.4	73.1	152	0	0	

Sample ID: **mb-62980** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **62980** RunNo: **81884**
Prep Date: **10/1/2021** Analysis Date: **10/7/2021** SeqNo: **2897034** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	2.1		4.000		53.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	4.0		8.000		49.8	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.5		4.000		38.0	15	84.5			
Surr: 4-Terphenyl-d14	3.1		4.000		77.0	73.1	152			

Sample ID: **lcs-62980** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **62980** RunNo: **81884**
Prep Date: **10/1/2021** Analysis Date: **10/7/2021** SeqNo: **2897035** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.9		5.000		78.0	21.9	89.8			
Surr: 2,4,6-Tribromophenol	6.6		10.00		65.6	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.8		5.000		56.4	15	84.5			
Surr: 4-Terphenyl-d14	5.2		5.000		103	73.1	152			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **lcsd-62980** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **62980** RunNo: **81884**
Prep Date: **10/1/2021** Analysis Date: **10/7/2021** SeqNo: **2897036** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.0		5.000		60.0	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	5.8		10.00		58.2	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	2.1		5.000		42.8	15	84.5	0	0	
Surr: 4-Terphenyl-d14	5.1		5.000		102	73.1	152	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**

03-Nov-21

Client: Marathon

Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G81662**	RunNo: **81662**
Prep Date:	Analysis Date: **9/28/2021**	SeqNo: **2886478** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	104	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.9	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G81662**	RunNo: **81662**
Prep Date:	Analysis Date: **9/28/2021**	SeqNo: **2886495** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		112	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R81695**	RunNo: **81695**
Prep Date:	Analysis Date: **9/29/2021**	SeqNo: **2887825** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R81695**	RunNo: **81695**
Prep Date:	Analysis Date: **9/29/2021**	SeqNo: **2887845** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		110	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G81729**	RunNo: **81729**
Prep Date:	Analysis Date: **9/30/2021**	SeqNo: **2889518** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	100	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G81729**	RunNo: **81729**
Prep Date:	Analysis Date: **9/30/2021**	SeqNo: **2889532** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109E60**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G81729**	RunNo: **81729**
Prep Date:	Analysis Date: **9/30/2021**	SeqNo: **2889532** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2109E60** RcptNo: **1**

Received By: **Desiree Dominguez** **9/24/2021 5:10:00 PM** DD

Completed By: **Desiree Dominguez** **9/25/2021 10:05:02 AM** DD

Reviewed By: KPG 9/27/21

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐ JR 9/27/21
8. Was preservative added to bottles? Yes ☑ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 36 (<2 or >12 unless noted)
Adjusted? yes
Checked by: JR 9/27/21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____
By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: ____
Client Instructions: ____

16. Additional remarks: 0.5ml of HNO3 was added to sample 011F for pH<2. JR 9/27/21
0.4ml of HNO3 was added to sample 005G for pH<2. JR 9/27/21.
Field Blank not provided for sample 013 JR 9/27/21

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good				
2	3.3	Good				
3	7.1	Good				
4	9.1	Good				
5	5.5	Good				

Released to Imaging: 11/23/2022 10:23:25 AM

Received by OCD: 3/25/2022 3:35:30 PM

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Petroleum Company	☐ Standard ☐ Rush
Mailing Address: 92 Giant Crossing Rd. Jamestown, NM 87347	Project Name: 2021 GW Sampling - 3rd Quarter
Phone #: 808-640-1823	Project #: 697-080-001
email or Fax#: bmcloughlin@trihydro.com	PO#: 4500267009
QA/QC Package: ☐ Standard ☐ Level 4 (Full Validation)	Project Manager: Lesli Alexander, Brian McLoughlin
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	Sampler:
☐ EDD (Type)	On Ice: ☒ Yes ☐ No
	# of Coolers: 5
	Cooler Temp(including CF): See Checklist

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2109E60	VOCs	TPH GRO	TPH DRO/MRO	SVOC includes 1,4 Dioxane on reques	1,4 Dioxane	WQCC metals	C/A	NO2/NO3 combined	Nitrite	8011 EDB	8260/BTEX/MTBE	COD	Cyanide	TDS/TSS	Gen Chem	PFAS
9/24	8:25	water	EB-09-24-21	18		-001	X	X	X	X		X	X									
9/24	8:25	water	MKTF-16	10		-002	X	X	X	X		X	X									
9/24	8:45	water	OW-30	12		-003	X	X	X	X		X	X			X						
9/24	9:15	water	OW-50	14		-004	X	X	X	X		X	X			X						
9/24	9:40	water	OW-52	14		-005	X	X	X	X		X	X			X						
9/24	10:15	water	OW-29	12		-006	X	X	X	X		X	X			X						
9/24	10:25	water	OW-14	12		-007	X	X	X	X		X	X			X						
9/24	10:40	water	OW-55	14		-008	X	X	X	X		X	X			X						
9/24	10:55	water	OW-17	12		-009	X	X	X	X		X	X			X						
9/24	16:15	water	OW-56	14		-010	X	X	X	X		X	X			X						
9/24	16:30	water	OW-54	14		-011	X	X	X	X		X	X			X						
9/24	—	water	DUP-09-24-21	14		-012	X	X	X	X		X	X			X						

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
9/24	1:30			Courier	9/24/21	17:10
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks: MKTF-16 only enough Fluid to get VOC the 4 packaged and less than half of 1 Amber. OW-56 Got everything but one Amber due to not enough Fluid to do so

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 11/23/2022 10:23:25 AM

Received by OCD: 3/25/2022 3:35:30 PM

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Petroleum Company

Mailing Address: 92 Giant Crossing Rd. Jamestown, NM 87347

Phone #: 808-640-1823

Email or Fax#: bmcloughlin@trihydro.com

QA/QC Package: ☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other

☐ EDD (Type)

☐ Standard ☐ Rush

Project Name: 2021 GW Sampling - 3rd Quarter

Project #: 697-080-001

PO#: 4500267009

Project Manager: Lesli Alexander, Brian McLoughlin

Sampler:

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): See Checklist

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2109E60	VOCs	TPH GRO	TPH DRO/MRO	SVOC includes 1,4 Dioxane on reques	1,4 Dioxane	WQCC metals	C/A	NO2/NO3 combined	Nitrite	8011 EDB	8260/BTEX/MTBE	COD	Cyanide	TDS/TSS	Gen Chem	PFAS
9/24	11:30	water	FB-09-24-21	2		-013	X															
9/23	10:30	water	BW-5C	1		-014			X													
		water																				
		water																				
		water																				
		water																				
		water																				
		water																				
		water																				
		water																				
		water																				
		water																				
		water																				

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
9/24	17:20			courier	9/24/21	17:10
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks: Forgot to send one Amber from BW-5C Yesterday.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

January 25, 2022

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL:
FAX

RE: 2021 GW Sampling 4th Quarter OrderNo.: 2112A87

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 9 sample(s) on 12/16/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Case Narrative

WO#: **2112A87**
Date: **1/25/2022**

CLIENT: Marathon
Project: 2021 GW Sampling 4th Quarter

Analytical Notes Regarding EPA Method 8270:
Pyridine is reported with an "E" flag. The "E" flag is used to represent an estimated value. Pyridine was not detected in the sample, but the calibration curve for this compound did not meet the method requirements.

"S" flags denote that the sample surrogate or spike result is outside of the acceptable limits due to sample dilution or matrix interferences.

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 8:50:00 AM
Lab ID: 2112A87-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	5400	23	100		µg/L	100	12/21/2021 4:06:14 PM	R84721
Toluene	18	2.0	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
Ethylbenzene	280	2.1	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
Methyl tert-butyl ether (MTBE)	81	3.9	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
1,2,4-Trimethylbenzene	2.2	1.2	10	J	µg/L	10	12/21/2021 4:34:49 PM	R84721
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
1,2-Dichloroethane (EDC)	5.4	2.5	4.0		µg/L	10	12/21/2021 4:34:49 PM	R84721
Naphthalene	ND	5.0	20		µg/L	10	12/21/2021 4:34:49 PM	R84721
1-Methylnaphthalene	ND	8.4	40		µg/L	10	12/21/2021 4:34:49 PM	R84721
2-Methylnaphthalene	ND	6.9	40		µg/L	10	12/21/2021 4:34:49 PM	R84721
Acetone	ND	25	100		µg/L	10	12/21/2021 4:34:49 PM	R84721
Bromomethane	ND	8.5	30		µg/L	10	12/21/2021 4:34:49 PM	R84721
2-Butanone	ND	20	100		µg/L	10	12/21/2021 4:34:49 PM	R84721
Chlorobenzene	ND	1.6	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
Chloroethane	ND	3.8	20		µg/L	10	12/21/2021 4:34:49 PM	R84721
Chloroform	ND	1.3	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
Chloromethane	ND	4.1	30		µg/L	10	12/21/2021 4:34:49 PM	R84721
cis-1,2-DCE	ND	3.9	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
1,1-Dichloroethane	20	2.7	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
1,1-Dichloroethene	4.6	2.0	10	J	µg/L	10	12/21/2021 4:34:49 PM	R84721
1,2-Dichloropropane	ND	2.0	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
2-Hexanone	ND	18	100		µg/L	10	12/21/2021 4:34:49 PM	R84721
Isopropylbenzene	22	1.8	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
4-Isopropyltoluene	2.4	2.0	10	J	µg/L	10	12/21/2021 4:34:49 PM	R84721
4-Methyl-2-pentanone	ND	8.8	100		µg/L	10	12/21/2021 4:34:49 PM	R84721
Methylene Chloride	ND	5.0	30		µg/L	10	12/21/2021 4:34:49 PM	R84721
n-Butylbenzene	9.0	2.5	30	J	µg/L	10	12/21/2021 4:34:49 PM	R84721
n-Propylbenzene	42	1.8	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
sec-Butylbenzene	6.8	1.4	10	J	µg/L	10	12/21/2021 4:34:49 PM	R84721
Styrene	ND	1.4	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
tert-Butylbenzene	ND	2.4	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
1,1,2-Trichloroethane	ND	2.0	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
Vinyl chloride	36	3.2	10		µg/L	10	12/21/2021 4:34:49 PM	R84721
Xylenes, Total	7.7	3.7	15	J	µg/L	10	12/21/2021 4:34:49 PM	R84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 8:50:00 AM
Lab ID: 2112A87-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Surr: 1,2-Dichloroethane-d4	93.0	0	70-130		%Rec	10	12/21/2021 4:34:49 PM	R84721
Surr: 4-Bromofluorobenzene	94.4	0	70-130		%Rec	10	12/21/2021 4:34:49 PM	R84721
Surr: Dibromofluoromethane	85.7	0	70-130		%Rec	10	12/21/2021 4:34:49 PM	R84721
Surr: Toluene-d8	99.2	0	70-130		%Rec	10	12/21/2021 4:34:49 PM	R84721
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	12	0.12	0.50		mg/L	10	12/21/2021 4:34:49 PM	G84721
Surr: 4-Bromofluorobenzene	97.9	0	70-130		%Rec	10	12/21/2021 4:34:49 PM	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 8:50:00 AM
Lab ID: 2112A87-001B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	12/21/2021 3:03:34 AM	64602

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 8:50:00 AM
Lab ID: 2112A87-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.67	0.016	0.064		mg/L	1	12/27/2021 1:26:42 PM	64630
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/27/2021 1:26:42 PM	64630
Surr: DNOP	106	0	15-142		%Rec	1	12/27/2021 1:26:42 PM	64630

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 8:50:00 AM
Lab ID: 2112A87-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/4/2022 4:36:09 AM	64594
Benzoic acid	ND	1.1	20		µg/L	1	1/4/2022 4:36:09 AM	64594
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/4/2022 4:36:09 AM	64594
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/4/2022 4:36:09 AM	64594
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/4/2022 4:36:09 AM	64594
Carbazole	ND	0.56	5.0		µg/L	1	1/4/2022 4:36:09 AM	64594
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/4/2022 4:36:09 AM	64594
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/4/2022 4:36:09 AM	64594
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/4/2022 4:36:09 AM	64594
Diethyl phthalate	ND	3.9	10		µg/L	1	1/4/2022 4:36:09 AM	64594
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/4/2022 4:36:09 AM	64594
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/4/2022 4:36:09 AM	64594
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/4/2022 4:36:09 AM	64594
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/4/2022 4:36:09 AM	64594
Phenol	46	0.33	5.0		µg/L	1	1/4/2022 4:36:09 AM	64594
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/4/2022 4:36:09 AM	64594
Surr: 2-Fluorophenol	69.4	0	15-87		%Rec	1	1/4/2022 4:36:09 AM	64594
Surr: Phenol-d5	55.1	0	15-67.5		%Rec	1	1/4/2022 4:36:09 AM	64594
Surr: 2,4,6-Tribromophenol	77.3	0	15-122		%Rec	1	1/4/2022 4:36:09 AM	64594
Surr: Nitrobenzene-d5	83.9	0	15-103		%Rec	1	1/4/2022 4:36:09 AM	64594
Surr: 2-Fluorobiphenyl	83.3	0	15-103		%Rec	1	1/4/2022 4:36:09 AM	64594
Surr: 4-Terphenyl-d14	112	0	45-137		%Rec	1	1/4/2022 4:36:09 AM	64594
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	14	0.048	1.0		µg/L	1	12/31/2021 2:31:00 AM	64684
Naphthalene	1.4	0.034	0.10		µg/L	1	12/31/2021 2:31:00 AM	64684
1-Methylnaphthalene	4.9	0.024	0.10		µg/L	1	12/31/2021 2:31:00 AM	64684
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	12/31/2021 2:31:00 AM	64684
Acenaphthene	0.52	0.031	0.10		µg/L	1	12/31/2021 2:31:00 AM	64684
Fluorene	ND	0.031	0.10		µg/L	1	12/31/2021 2:31:00 AM	64684
Phenanthrene	ND	0.057	0.10		µg/L	1	12/31/2021 2:31:00 AM	64684
Anthracene	ND	0.034	0.10		µg/L	1	12/31/2021 2:31:00 AM	64684
Pyrene	ND	0.16	0.20		µg/L	1	12/31/2021 2:31:00 AM	64684
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	12/31/2021 2:31:00 AM	64684
Chrysene	ND	0.024	0.10		µg/L	1	12/31/2021 2:31:00 AM	64684
Surr: Nitrobenzene-d5	15.5	0	21.9-89.8	S	%Rec	1	12/31/2021 2:31:00 AM	64684
Surr: 2-Fluorobiphenyl	59.0	0	15-84.5		%Rec	1	12/31/2021 2:31:00 AM	64684
Surr: 4-Terphenyl-d14	99.5	0	73.1-152		%Rec	1	12/31/2021 2:31:00 AM	64684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 8:50:00 AM
Lab ID: 2112A87-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Fluoride	ND	0.040	0.10		mg/L	1	12/17/2021 4:48:53 PM	R84637
Chloride	1300	25	50	*	mg/L	100	1/3/2022 4:03:26 PM	R84917
Nitrogen, Nitrite (As N)	ND	0.11	2.0		mg/L	20	12/17/2021 5:01:46 PM	R84637
Nitrogen, Nitrate (As N)	0.17	0.010	0.10		mg/L	1	12/17/2021 4:48:53 PM	R84637
Sulfate	13	0.25	0.50		mg/L	1	12/17/2021 4:48:53 PM	R84637

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 8:50:00 AM
Lab ID: 2112A87-001F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.91	0.0016	0.0030		mg/L	1	12/21/2021 1:13:45 PM	64647
Cadmium	ND	0.0015	0.0020		mg/L	1	12/21/2021 1:13:45 PM	64647
Chromium	ND	0.0021	0.0060		mg/L	1	12/21/2021 1:13:45 PM	64647
Iron	0.77	0.013	0.050	*	mg/L	1	12/21/2021 1:13:45 PM	64647
Manganese	4.7	0.0041	0.010	*	mg/L	5	12/21/2021 1:15:11 PM	64647
Silver	ND	0.0013	0.0050		mg/L	1	12/21/2021 1:13:45 PM	64647
Zinc	ND	0.0064	0.010		mg/L	1	12/21/2021 1:13:45 PM	64647
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0035	0.00013	0.0010		mg/L	1	12/21/2021 2:12:51 PM	64647
Copper	0.00080	0.00040	0.0010	J	mg/L	1	12/21/2021 2:12:51 PM	64647
Lead	0.0019	0.000061	0.00050		mg/L	1	12/21/2021 2:12:51 PM	64647
Selenium	ND	0.00037	0.0010		mg/L	1	12/21/2021 2:12:51 PM	64647
Uranium	0.0092	0.000069	0.00050		mg/L	1	12/21/2021 2:12:51 PM	64647
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	12/27/2021 4:05:48 PM	64708

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 8:50:00 AM
Lab ID: 2112A87-001G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.83	0.0011	0.0020		mg/L	1	12/17/2021 11:31:17 A	B84630
Cadmium	ND	0.00098	0.0020		mg/L	1	12/17/2021 11:31:17 A	B84630
Chromium	ND	0.0020	0.0060		mg/L	1	12/17/2021 11:31:17 A	B84630
Iron	0.64	0.052	0.10	*	mg/L	5	12/17/2021 12:14:15 P	B84630
Manganese	4.4	0.0058	0.020	*	mg/L	10	12/17/2021 11:32:45 A	B84630
Silver	ND	0.0013	0.0050		mg/L	1	12/17/2021 11:31:17 A	B84630
Zinc	0.011	0.0032	0.010		mg/L	1	12/17/2021 11:31:17 A	B84630
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0032	0.00012	0.0010		mg/L	1	12/29/2021 5:10:56 PM	B84856
Copper	ND	0.00037	0.0010		mg/L	1	12/29/2021 5:10:56 PM	B84856
Lead	0.0011	0.000057	0.00050		mg/L	1	12/30/2021 3:07:06 PM	B84886
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 3:07:06 PM	B84886
Uranium	0.0089	0.000065	0.00050		mg/L	1	12/30/2021 3:07:06 PM	B84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00015	0.00012	0.00020	J	mg/L	1	12/27/2021 4:07:58 PM	64708

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:15:00 AM
Lab ID: 2112A87-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	69	0.23	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
Toluene	ND	0.20	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
Methyl tert-butyl ether (MTBE)	35	0.39	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
1,2,4-Trimethylbenzene	0.15	0.12	1.0	J	µg/L	1	12/21/2021 6:00:51 PM	R84721
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
1,2-Dichloroethane (EDC)	40	0.25	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
Naphthalene	ND	0.50	2.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
Acetone	11	2.5	10		µg/L	1	12/21/2021 6:00:51 PM	R84721
Bromomethane	ND	0.85	3.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
2-Butanone	ND	2.0	10		µg/L	1	12/21/2021 6:00:51 PM	R84721
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
Chloroethane	ND	0.38	2.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
Chloroform	0.94	0.13	1.0	J	µg/L	1	12/21/2021 6:00:51 PM	R84721
Chloromethane	ND	0.41	3.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
cis-1,2-DCE	2.3	0.39	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
1,1-Dichloroethane	74	0.27	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
1,1-Dichloroethene	310	2.0	10		µg/L	10	12/22/2021 10:28:58 P	R84759
1,2-Dichloropropane	0.38	0.20	1.0	J	µg/L	1	12/21/2021 6:00:51 PM	R84721
2-Hexanone	ND	1.8	10		µg/L	1	12/21/2021 6:00:51 PM	R84721
Isopropylbenzene	0.91	0.18	1.0	J	µg/L	1	12/21/2021 6:00:51 PM	R84721
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/21/2021 6:00:51 PM	R84721
Methylene Chloride	0.85	0.50	3.0	J	µg/L	1	12/21/2021 6:00:51 PM	R84721
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
n-Propylbenzene	0.20	0.18	1.0	J	µg/L	1	12/21/2021 6:00:51 PM	R84721
sec-Butylbenzene	0.18	0.14	1.0	J	µg/L	1	12/21/2021 6:00:51 PM	R84721
Styrene	ND	0.14	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
1,1,1-Trichloroethane	0.80	0.30	1.0	J	µg/L	1	12/21/2021 6:00:51 PM	R84721
1,1,2-Trichloroethane	5.7	0.20	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
Trichloroethene (TCE)	15	0.20	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
Vinyl chloride	1.0	0.32	1.0		µg/L	1	12/21/2021 6:00:51 PM	R84721
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/21/2021 6:00:51 PM	R84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:15:00 AM
Lab ID: 2112A87-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Surr: 1,2-Dichloroethane-d4	95.5	0	70-130		%Rec	1	12/21/2021 6:00:51 PM	R84721
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	12/21/2021 6:00:51 PM	R84721
Surr: Dibromofluoromethane	88.2	0	70-130		%Rec	1	12/21/2021 6:00:51 PM	R84721
Surr: Toluene-d8	102	0	70-130		%Rec	1	12/21/2021 6:00:51 PM	R84721
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.54	0.012	0.050		mg/L	1	12/21/2021 6:00:51 PM	G84721
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	12/21/2021 6:00:51 PM	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:15:00 AM
Lab ID: 2112A87-002B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	0.35	0.017	0.047		µg/L	5	12/21/2021 8:26:30 AM	64602

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:15:00 AM
Lab ID: 2112A87-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.19	0.016	0.064		mg/L	1	12/27/2021 1:50:09 PM	64630
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/27/2021 1:50:09 PM	64630
Surr: DNOP	116	0	15-142		%Rec	1	12/27/2021 1:50:09 PM	64630

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:15:00 AM
Lab ID: 2112A87-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/4/2022 5:17:17 AM	64594
Benzoic acid	ND	1.1	20		µg/L	1	1/4/2022 5:17:17 AM	64594
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/4/2022 5:17:17 AM	64594
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/4/2022 5:17:17 AM	64594
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/4/2022 5:17:17 AM	64594
Carbazole	ND	0.56	5.0		µg/L	1	1/4/2022 5:17:17 AM	64594
Di-n-octyl phthalate	3.1	3.1	20	J	µg/L	1	1/4/2022 5:17:17 AM	64594
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/4/2022 5:17:17 AM	64594
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/4/2022 5:17:17 AM	64594
Diethyl phthalate	ND	3.9	10		µg/L	1	1/4/2022 5:17:17 AM	64594
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/4/2022 5:17:17 AM	64594
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/4/2022 5:17:17 AM	64594
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/4/2022 5:17:17 AM	64594
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/4/2022 5:17:17 AM	64594
Phenol	ND	0.33	5.0		µg/L	1	1/4/2022 5:17:17 AM	64594
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/4/2022 5:17:17 AM	64594
Surr: 2-Fluorophenol	67.3	0	15-87		%Rec	1	1/4/2022 5:17:17 AM	64594
Surr: Phenol-d5	49.2	0	15-67.5		%Rec	1	1/4/2022 5:17:17 AM	64594
Surr: 2,4,6-Tribromophenol	95.1	0	15-122		%Rec	1	1/4/2022 5:17:17 AM	64594
Surr: Nitrobenzene-d5	81.9	0	15-103		%Rec	1	1/4/2022 5:17:17 AM	64594
Surr: 2-Fluorobiphenyl	80.9	0	15-103		%Rec	1	1/4/2022 5:17:17 AM	64594
Surr: 4-Terphenyl-d14	121	0	45-137		%Rec	1	1/4/2022 5:17:17 AM	64594
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	160	0.48	10		µg/L	10	1/5/2022 11:55:00 AM	64684
Naphthalene	ND	0.034	0.10		µg/L	1	12/31/2021 3:14:00 AM	64684
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	12/31/2021 3:14:00 AM	64684
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	12/31/2021 3:14:00 AM	64684
Acenaphthene	ND	0.031	0.10		µg/L	1	12/31/2021 3:14:00 AM	64684
Fluorene	ND	0.031	0.10		µg/L	1	12/31/2021 3:14:00 AM	64684
Phenanthrene	ND	0.057	0.10		µg/L	1	12/31/2021 3:14:00 AM	64684
Anthracene	ND	0.034	0.10		µg/L	1	12/31/2021 3:14:00 AM	64684
Pyrene	ND	0.16	0.20		µg/L	1	12/31/2021 3:14:00 AM	64684
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	12/31/2021 3:14:00 AM	64684
Chrysene	ND	0.024	0.10		µg/L	1	12/31/2021 3:14:00 AM	64684
Surr: Nitrobenzene-d5	76.0	0	21.9-89.8		%Rec	1	12/31/2021 3:14:00 AM	64684
Surr: 2-Fluorobiphenyl	65.5	0	15-84.5		%Rec	1	12/31/2021 3:14:00 AM	64684
Surr: 4-Terphenyl-d14	101	0	73.1-152		%Rec	1	12/31/2021 3:14:00 AM	64684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:15:00 AM
Lab ID: 2112A87-002E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Fluoride	ND	0.040	0.10		mg/L	1	12/17/2021 5:14:38 PM	R84637
Chloride	1900	50	100	*	mg/L	200	1/3/2022 4:16:18 PM	R84917
Nitrogen, Nitrite (As N)	ND	0.11	2.0		mg/L	20	12/17/2021 5:27:32 PM	R84637
Nitrogen, Nitrate (As N)	0.071	0.010	0.10	J	mg/L	1	12/17/2021 5:14:38 PM	R84637
Sulfate	660	5.0	10	*	mg/L	20	12/17/2021 5:27:32 PM	R84637

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:15:00 AM
Lab ID: 2112A87-002F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.072	0.0016	0.0030		mg/L	1	12/21/2021 1:21:50 PM	64647
Cadmium	ND	0.0015	0.0020		mg/L	1	12/21/2021 1:21:50 PM	64647
Chromium	ND	0.0021	0.0060		mg/L	1	12/21/2021 1:21:50 PM	64647
Iron	0.71	0.013	0.050	*	mg/L	1	12/21/2021 1:21:50 PM	64647
Manganese	0.23	0.00081	0.0020	*	mg/L	1	12/21/2021 1:21:50 PM	64647
Silver	ND	0.0013	0.0050		mg/L	1	12/21/2021 1:21:50 PM	64647
Zinc	0.0088	0.0064	0.010	J	mg/L	1	12/21/2021 1:21:50 PM	64647
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0030	0.00063	0.0050	J	mg/L	5	12/21/2021 3:26:42 PM	64647
Copper	0.0026	0.0020	0.0050	J	mg/L	5	12/21/2021 3:26:42 PM	64647
Lead	0.00051	0.00031	0.0025	J	mg/L	5	12/21/2021 3:26:42 PM	64647
Selenium	ND	0.0019	0.0050		mg/L	5	12/21/2021 3:26:42 PM	64647
Uranium	0.087	0.00034	0.0025	*	mg/L	5	12/21/2021 3:26:42 PM	64647
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	12/27/2021 4:10:08 PM	64708

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:15:00 AM
Lab ID: 2112A87-002G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.059	0.0011	0.0020		mg/L	1	12/17/2021 11:34:26 A	B84630
Cadmium	ND	0.00098	0.0020		mg/L	1	12/17/2021 11:34:26 A	B84630
Chromium	ND	0.0020	0.0060		mg/L	1	12/17/2021 11:34:26 A	B84630
Iron	0.029	0.010	0.020		mg/L	1	12/17/2021 11:34:26 A	B84630
Manganese	0.21	0.00058	0.0020	*	mg/L	1	12/17/2021 11:34:26 A	B84630
Silver	ND	0.0013	0.0050		mg/L	1	12/17/2021 11:34:26 A	B84630
Zinc	0.017	0.0032	0.010		mg/L	1	12/17/2021 11:34:26 A	B84630
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0023	0.00061	0.0050	J	mg/L	5	12/30/2021 3:12:29 PM	B84886
Copper	ND	0.0018	0.0050		mg/L	5	12/30/2021 3:12:29 PM	B84886
Lead	ND	0.00028	0.0025		mg/L	5	12/30/2021 3:12:29 PM	B84886
Selenium	ND	0.0017	0.0050		mg/L	5	12/30/2021 3:12:29 PM	B84886
Uranium	0.080	0.00033	0.0025	*	mg/L	5	12/30/2021 3:12:29 PM	B84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/11/2022 2:10:49 PM	64935

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:40:00 AM
Lab ID: 2112A87-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	1.3	1.1	5.0	J	µg/L	5	12/21/2021 7:26:35 PM	R84721
Toluene	ND	1.0	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
Ethylbenzene	ND	1.1	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
Methyl tert-butyl ether (MTBE)	440	2.0	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
1,2,4-Trimethylbenzene	0.67	0.61	5.0	J	µg/L	5	12/21/2021 7:26:35 PM	R84721
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
1,2-Dichloroethane (EDC)	17	1.3	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
Naphthalene	ND	2.5	10		µg/L	5	12/21/2021 7:26:35 PM	R84721
1-Methylnaphthalene	ND	4.2	20		µg/L	5	12/21/2021 7:26:35 PM	R84721
2-Methylnaphthalene	ND	3.5	20		µg/L	5	12/21/2021 7:26:35 PM	R84721
Acetone	ND	13	50		µg/L	5	12/21/2021 7:26:35 PM	R84721
Bromomethane	ND	4.3	15		µg/L	5	12/21/2021 7:26:35 PM	R84721
2-Butanone	ND	10	50		µg/L	5	12/21/2021 7:26:35 PM	R84721
Chlorobenzene	ND	0.78	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
Chloroethane	2.1	1.9	10	J	µg/L	5	12/21/2021 7:26:35 PM	R84721
Chloroform	ND	0.67	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
Chloromethane	3.2	2.1	15	J	µg/L	5	12/21/2021 7:26:35 PM	R84721
cis-1,2-DCE	3.2	1.9	5.0	J	µg/L	5	12/21/2021 7:26:35 PM	R84721
1,2-Dichlorobenzene	ND	0.77	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
1,4-Dichlorobenzene	ND	1.0	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
1,1-Dichloroethane	38	1.4	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
1,1-Dichloroethene	49	1.0	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
1,2-Dichloropropane	ND	1.0	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
2-Hexanone	ND	9.0	50		µg/L	5	12/21/2021 7:26:35 PM	R84721
Isopropylbenzene	ND	0.91	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
4-Methyl-2-pentanone	ND	4.4	50		µg/L	5	12/21/2021 7:26:35 PM	R84721
Methylene Chloride	ND	2.5	15		µg/L	5	12/21/2021 7:26:35 PM	R84721
n-Butylbenzene	ND	1.3	15		µg/L	5	12/21/2021 7:26:35 PM	R84721
n-Propylbenzene	ND	0.91	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
sec-Butylbenzene	ND	0.72	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
Styrene	ND	0.68	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
tert-Butylbenzene	ND	1.2	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
1,2,4-Trichlorobenzene	ND	1.2	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
1,1,1-Trichloroethane	2.3	1.5	5.0	J	µg/L	5	12/21/2021 7:26:35 PM	R84721
1,1,2-Trichloroethane	2.4	0.99	5.0	J	µg/L	5	12/21/2021 7:26:35 PM	R84721
Trichloroethene (TCE)	5.1	1.0	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
Vinyl chloride	ND	1.6	5.0		µg/L	5	12/21/2021 7:26:35 PM	R84721
Xylenes, Total	ND	1.9	7.5		µg/L	5	12/21/2021 7:26:35 PM	R84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:40:00 AM
Lab ID: 2112A87-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	5	12/21/2021 7:26:35 PM	R84721
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	5	12/21/2021 7:26:35 PM	R84721
Surr: Dibromofluoromethane	97.3	0	70-130		%Rec	5	12/21/2021 7:26:35 PM	R84721
Surr: Toluene-d8	104	0	70-130		%Rec	5	12/21/2021 7:26:35 PM	R84721
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.43	0.061	0.25		mg/L	5	12/21/2021 7:26:35 PM	G84721
Surr: 4-Bromofluorobenzene	110	0	70-130		%Rec	5	12/21/2021 7:26:35 PM	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:40:00 AM
Lab ID: 2112A87-003B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0035	0.0094		µg/L	1	12/21/2021 3:33:08 AM	64602

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:40:00 AM
Lab ID: 2112A87-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.22	0.016	0.064		mg/L	1	12/27/2021 2:13:37 PM	64630
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/27/2021 2:13:37 PM	64630
Surr: DNOP	112	0	15-142		%Rec	1	12/27/2021 2:13:37 PM	64630

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:40:00 AM
Lab ID: 2112A87-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/5/2022 8:14:11 AM	64659
Benzoic acid	ND	1.1	20		µg/L	1	1/5/2022 8:14:11 AM	64659
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/5/2022 8:14:11 AM	64659
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/5/2022 8:14:11 AM	64659
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/5/2022 8:14:11 AM	64659
Carbazole	ND	0.56	5.0		µg/L	1	1/5/2022 8:14:11 AM	64659
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/5/2022 8:14:11 AM	64659
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/5/2022 8:14:11 AM	64659
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/5/2022 8:14:11 AM	64659
Diethyl phthalate	ND	3.9	10		µg/L	1	1/5/2022 8:14:11 AM	64659
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/5/2022 8:14:11 AM	64659
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/5/2022 8:14:11 AM	64659
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/5/2022 8:14:11 AM	64659
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/5/2022 8:14:11 AM	64659
Phenol	ND	0.33	5.0		µg/L	1	1/5/2022 8:14:11 AM	64659
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/5/2022 8:14:11 AM	64659
Surr: 2-Fluorophenol	63.2	0	15-87		%Rec	1	1/5/2022 8:14:11 AM	64659
Surr: Phenol-d5	48.0	0	15-67.5		%Rec	1	1/5/2022 8:14:11 AM	64659
Surr: 2,4,6-Tribromophenol	85.3	0	15-122		%Rec	1	1/5/2022 8:14:11 AM	64659
Surr: Nitrobenzene-d5	73.2	0	15-103		%Rec	1	1/5/2022 8:14:11 AM	64659
Surr: 2-Fluorobiphenyl	72.6	0	15-103		%Rec	1	1/5/2022 8:14:11 AM	64659
Surr: 4-Terphenyl-d14	98.1	0	45-137		%Rec	1	1/5/2022 8:14:11 AM	64659
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	60	0.48	10		µg/L	10	1/5/2022 12:42:00 PM	64684
Naphthalene	ND	0.034	0.10		µg/L	1	12/31/2021 3:58:00 AM	64684
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	12/31/2021 3:58:00 AM	64684
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	12/31/2021 3:58:00 AM	64684
Acenaphthene	ND	0.031	0.10		µg/L	1	12/31/2021 3:58:00 AM	64684
Fluorene	ND	0.031	0.10		µg/L	1	12/31/2021 3:58:00 AM	64684
Phenanthrene	ND	0.057	0.10		µg/L	1	12/31/2021 3:58:00 AM	64684
Anthracene	ND	0.034	0.10		µg/L	1	12/31/2021 3:58:00 AM	64684
Pyrene	ND	0.16	0.20		µg/L	1	12/31/2021 3:58:00 AM	64684
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	12/31/2021 3:58:00 AM	64684
Chrysene	ND	0.024	0.10		µg/L	1	12/31/2021 3:58:00 AM	64684
Surr: Nitrobenzene-d5	71.5	0	21.9-89.8		%Rec	1	12/31/2021 3:58:00 AM	64684
Surr: 2-Fluorobiphenyl	65.5	0	15-84.5		%Rec	1	12/31/2021 3:58:00 AM	64684
Surr: 4-Terphenyl-d14	101	0	73.1-152		%Rec	1	12/31/2021 3:58:00 AM	64684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:40:00 AM
Lab ID: 2112A87-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Fluoride	ND	0.040	0.10		mg/L	1	12/17/2021 5:40:25 PM	R84637
Chloride	500	12	25	*	mg/L	50	1/3/2022 4:54:55 PM	R84917
Nitrogen, Nitrite (As N)	ND	0.11	2.0		mg/L	20	12/17/2021 5:53:18 PM	R84637
Nitrogen, Nitrate (As N)	ND	0.010	0.10		mg/L	1	12/17/2021 5:40:25 PM	R84637
Sulfate	61	5.0	10		mg/L	20	12/17/2021 5:53:18 PM	R84637

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:40:00 AM
Lab ID: 2112A87-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.13	0.0016	0.0030		mg/L	1	12/21/2021 1:24:58 PM	64647
Cadmium	ND	0.0015	0.0020		mg/L	1	12/21/2021 1:24:58 PM	64647
Chromium	ND	0.0021	0.0060		mg/L	1	12/21/2021 1:24:58 PM	64647
Iron	0.62	0.013	0.050	*	mg/L	1	12/21/2021 1:24:58 PM	64647
Manganese	0.052	0.00081	0.0020	*	mg/L	1	12/21/2021 1:24:58 PM	64647
Silver	ND	0.0013	0.0050		mg/L	1	12/21/2021 1:24:58 PM	64647
Zinc	ND	0.0064	0.010		mg/L	1	12/21/2021 1:24:58 PM	64647
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.00072	0.00013	0.0010	J	mg/L	1	12/21/2021 2:17:44 PM	64647
Copper	0.0023	0.00040	0.0010		mg/L	1	12/21/2021 2:17:44 PM	64647
Lead	0.00048	0.000061	0.00050	J	mg/L	1	12/21/2021 2:17:44 PM	64647
Selenium	ND	0.00037	0.0010		mg/L	1	12/21/2021 2:17:44 PM	64647
Uranium	0.050	0.00034	0.0025	*	mg/L	5	12/21/2021 3:29:08 PM	64647
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	12/27/2021 4:12:19 PM	64708

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 9:40:00 AM
Lab ID: 2112A87-003G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.12	0.0011	0.0020		mg/L	1	12/17/2021 11:44:22 A	B84630
Cadmium	ND	0.00098	0.0020		mg/L	1	12/17/2021 11:44:22 A	B84630
Chromium	ND	0.0020	0.0060		mg/L	1	12/17/2021 11:44:22 A	B84630
Iron	ND	0.010	0.020		mg/L	1	12/17/2021 11:44:22 A	B84630
Manganese	0.040	0.00058	0.0020		mg/L	1	12/17/2021 11:44:22 A	B84630
Silver	ND	0.0013	0.0050		mg/L	1	12/17/2021 11:44:22 A	B84630
Zinc	0.0080	0.0032	0.010	J	mg/L	1	12/17/2021 11:44:22 A	B84630
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00053	0.00012	0.0010	J	mg/L	1	12/29/2021 5:16:18 PM	B84856
Copper	0.00087	0.00037	0.0010	J	mg/L	1	12/29/2021 5:16:18 PM	B84856
Lead	0.000080	0.000057	0.00050	J	mg/L	1	12/29/2021 5:16:18 PM	B84856
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 3:15:10 PM	B84886
Uranium	0.045	0.00033	0.0025	*	mg/L	5	12/30/2021 3:17:51 PM	B84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/11/2022 1:29:27 PM	64935

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:00:00 AM
Lab ID: 2112A87-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	4300	23	100		µg/L	100	12/21/2021 7:55:09 PM	R84721
Toluene	170	2.0	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
Ethylbenzene	190	2.1	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
Methyl tert-butyl ether (MTBE)	39	3.9	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
1,2,4-Trimethylbenzene	140	1.2	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
1,3,5-Trimethylbenzene	33	1.8	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
1,2-Dichloroethane (EDC)	4.3	2.5	10	J	µg/L	10	12/21/2021 8:23:49 PM	R84721
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
Naphthalene	26	5.0	20		µg/L	10	12/21/2021 8:23:49 PM	R84721
1-Methylnaphthalene	ND	8.4	40		µg/L	10	12/21/2021 8:23:49 PM	R84721
2-Methylnaphthalene	ND	6.9	40		µg/L	10	12/21/2021 8:23:49 PM	R84721
Acetone	ND	25	100		µg/L	10	12/21/2021 8:23:49 PM	R84721
Bromomethane	ND	8.5	30		µg/L	10	12/21/2021 8:23:49 PM	R84721
2-Butanone	ND	20	100		µg/L	10	12/21/2021 8:23:49 PM	R84721
Chlorobenzene	ND	1.6	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
Chloroethane	ND	3.8	20		µg/L	10	12/21/2021 8:23:49 PM	R84721
Chloroform	2.5	1.3	10	J	µg/L	10	12/21/2021 8:23:49 PM	R84721
Chloromethane	ND	4.1	30		µg/L	10	12/21/2021 8:23:49 PM	R84721
cis-1,2-DCE	ND	3.9	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
1,1-Dichloroethane	11	2.7	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
1,1-Dichloroethene	ND	2.0	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
1,2-Dichloropropane	ND	2.0	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
2-Hexanone	ND	18	100		µg/L	10	12/21/2021 8:23:49 PM	R84721
Isopropylbenzene	7.0	1.8	10	J	µg/L	10	12/21/2021 8:23:49 PM	R84721
4-Isopropyltoluene	ND	2.0	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
4-Methyl-2-pentanone	ND	8.8	100		µg/L	10	12/21/2021 8:23:49 PM	R84721
Methylene Chloride	ND	5.0	30		µg/L	10	12/21/2021 8:23:49 PM	R84721
n-Butylbenzene	ND	2.5	30		µg/L	10	12/21/2021 8:23:49 PM	R84721
n-Propylbenzene	9.5	1.8	10	J	µg/L	10	12/21/2021 8:23:49 PM	R84721
sec-Butylbenzene	3.3	1.4	10	J	µg/L	10	12/21/2021 8:23:49 PM	R84721
Styrene	ND	1.4	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
tert-Butylbenzene	ND	2.4	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
1,1,2-Trichloroethane	3.2	2.0	10	J	µg/L	10	12/21/2021 8:23:49 PM	R84721
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	12/21/2021 8:23:49 PM	R84721
Vinyl chloride	20	3.2	10		µg/L	10	12/21/2021 8:23:49 PM	R84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:00:00 AM
Lab ID: 2112A87-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	910	3.7	15		µg/L	10	12/21/2021 8:23:49 PM	R84721
Surr: 1,2-Dichloroethane-d4	95.1	0	70-130		%Rec	10	12/21/2021 8:23:49 PM	R84721
Surr: 4-Bromofluorobenzene	94.3	0	70-130		%Rec	10	12/21/2021 8:23:49 PM	R84721
Surr: Dibromofluoromethane	88.7	0	70-130		%Rec	10	12/21/2021 8:23:49 PM	R84721
Surr: Toluene-d8	103	0	70-130		%Rec	10	12/21/2021 8:23:49 PM	R84721
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	12	0.12	0.50		mg/L	10	12/21/2021 8:23:49 PM	G84721
Surr: 4-Bromofluorobenzene	99.3	0	70-130		%Rec	10	12/21/2021 8:23:49 PM	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:00:00 AM
Lab ID: 2112A87-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.77	0.016	0.064		mg/L	1	12/27/2021 2:37:05 PM	64630
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/27/2021 2:37:05 PM	64630
Surr: DNOP	105	0	15-142		%Rec	1	12/27/2021 2:37:05 PM	64630

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:00:00 AM
Lab ID: 2112A87-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.72	7.1	D	µg/L	1	1/5/2022 8:55:13 AM	64659
Benzoic acid	ND	1.5	29	D	µg/L	1	1/5/2022 8:55:13 AM	64659
Benzyl alcohol	ND	0.98	7.1	D	µg/L	1	1/5/2022 8:55:13 AM	64659
Bis(2-ethylhexyl)phthalate	ND	6.4	14	D	µg/L	1	1/5/2022 8:55:13 AM	64659
Butyl benzyl phthalate	ND	1.1	7.1	D	µg/L	1	1/5/2022 8:55:13 AM	64659
Carbazole	ND	0.80	7.1	D	µg/L	1	1/5/2022 8:55:13 AM	64659
Di-n-octyl phthalate	ND	4.4	29	D	µg/L	1	1/5/2022 8:55:13 AM	64659
Dibenzofuran	ND	0.54	7.1	D	µg/L	1	1/5/2022 8:55:13 AM	64659
1,4-Dichlorobenzene	ND	1.0	7.1	D	µg/L	1	1/5/2022 8:55:13 AM	64659
Diethyl phthalate	ND	5.6	14	D	µg/L	1	1/5/2022 8:55:13 AM	64659
Dimethyl phthalate	ND	2.9	14	D	µg/L	1	1/5/2022 8:55:13 AM	64659
2,4-Dimethylphenol	3.9	1.4	7.1	JD	µg/L	1	1/5/2022 8:55:13 AM	64659
2-Methylphenol	1.9	0.73	7.1	JD	µg/L	1	1/5/2022 8:55:13 AM	64659
3+4-Methylphenol	ND	0.64	7.1	D	µg/L	1	1/5/2022 8:55:13 AM	64659
Phenol	44	0.47	7.1	D	µg/L	1	1/5/2022 8:55:13 AM	64659
2,4,6-Trichlorophenol	ND	0.62	7.1	D	µg/L	1	1/5/2022 8:55:13 AM	64659
Surr: 2-Fluorophenol	52.6	0	15-87	D	%Rec	1	1/5/2022 8:55:13 AM	64659
Surr: Phenol-d5	41.9	0	15-67.5	D	%Rec	1	1/5/2022 8:55:13 AM	64659
Surr: 2,4,6-Tribromophenol	83.6	0	15-122	D	%Rec	1	1/5/2022 8:55:13 AM	64659
Surr: Nitrobenzene-d5	66.3	0	15-103	D	%Rec	1	1/5/2022 8:55:13 AM	64659
Surr: 2-Fluorobiphenyl	65.9	0	15-103	D	%Rec	1	1/5/2022 8:55:13 AM	64659
Surr: 4-Terphenyl-d14	101	0	45-137	D	%Rec	1	1/5/2022 8:55:13 AM	64659
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	6.6	0.48	10	J	µg/L	10	12/31/2021 4:42:00 AM	64684
Naphthalene	13	0.34	1.0		µg/L	10	12/31/2021 4:42:00 AM	64684
1-Methylnaphthalene	4.0	0.24	1.0		µg/L	10	12/31/2021 4:42:00 AM	64684
2-Methylnaphthalene	5.0	0.34	1.0		µg/L	10	12/31/2021 4:42:00 AM	64684
Acenaphthene	ND	0.31	1.0	D	µg/L	10	12/31/2021 4:42:00 AM	64684
Fluorene	ND	0.31	1.0	D	µg/L	10	12/31/2021 4:42:00 AM	64684
Phenanthrene	ND	0.57	1.0	D	µg/L	10	12/31/2021 4:42:00 AM	64684
Anthracene	ND	0.34	1.0	D	µg/L	10	12/31/2021 4:42:00 AM	64684
Pyrene	ND	1.6	2.0	D	µg/L	10	12/31/2021 4:42:00 AM	64684
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	12/31/2021 4:42:00 AM	64684
Chrysene	ND	0.24	1.0	D	µg/L	10	12/31/2021 4:42:00 AM	64684
Surr: Nitrobenzene-d5	0	0	21.9-89.8	S	%Rec	10	12/31/2021 4:42:00 AM	64684
Surr: 2-Fluorobiphenyl	0	0	15-84.5	S	%Rec	10	12/31/2021 4:42:00 AM	64684
Surr: 4-Terphenyl-d14	0	0	73.1-152	S	%Rec	10	12/31/2021 4:42:00 AM	64684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:00:00 AM
Lab ID: 2112A87-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Fluoride	0.58	0.20	0.50		mg/L	5	12/17/2021 6:06:10 PM	R84637
Chloride	1800	50	100	*	mg/L	200	1/3/2022 5:07:47 PM	R84917
Nitrogen, Nitrite (As N)	ND	0.11	2.0		mg/L	20	12/17/2021 6:19:03 PM	R84637
Nitrogen, Nitrate (As N)	0.086	0.050	0.50	J	mg/L	5	12/17/2021 6:06:10 PM	R84637
Sulfate	15	1.2	2.5		mg/L	5	12/17/2021 6:06:10 PM	R84637

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:00:00 AM
Lab ID: 2112A87-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	4.8	0.0082	0.015	*	mg/L	5	12/21/2021 1:29:17 PM	64648
Cadmium	ND	0.0015	0.0020		mg/L	1	12/21/2021 1:28:04 PM	64648
Chromium	ND	0.0021	0.0060		mg/L	1	12/21/2021 1:28:04 PM	64648
Iron	5.5	0.13	0.50	*	mg/L	10	12/21/2021 2:19:09 PM	64648
Manganese	5.3	0.0081	0.020	*	mg/L	10	12/21/2021 2:19:09 PM	64648
Silver	ND	0.0013	0.0050		mg/L	1	12/21/2021 1:28:04 PM	64648
Zinc	ND	0.0064	0.010		mg/L	1	12/21/2021 1:28:04 PM	64648
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.014	0.00063	0.0050	*	mg/L	5	12/21/2021 3:31:34 PM	64648
Copper	ND	0.0020	0.0050		mg/L	5	12/21/2021 3:31:34 PM	64648
Lead	0.00047	0.00031	0.0025	J	mg/L	5	12/21/2021 3:31:34 PM	64648
Selenium	ND	0.0019	0.0050		mg/L	5	12/21/2021 3:31:34 PM	64648
Uranium	0.0092	0.00034	0.0025		mg/L	5	12/21/2021 3:31:34 PM	64648
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	12/27/2021 4:14:30 PM	64708

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:00:00 AM
Lab ID: 2112A87-004G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	4.3	0.0056	0.010	*	mg/L	5	12/17/2021 11:49:04 A	B84630
Cadmium	ND	0.00098	0.0020		mg/L	1	12/17/2021 11:47:39 A	B84630
Chromium	ND	0.0020	0.0060		mg/L	1	12/17/2021 11:47:39 A	B84630
Iron	3.1	0.052	0.10	*	mg/L	5	12/17/2021 11:49:04 A	B84630
Manganese	5.0	0.0029	0.010	*	mg/L	5	12/17/2021 11:49:04 A	B84630
Silver	ND	0.0013	0.0050		mg/L	1	12/17/2021 11:47:39 A	B84630
Zinc	0.010	0.0032	0.010		mg/L	1	12/17/2021 11:47:39 A	B84630
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.011	0.00061	0.0050	*	mg/L	5	12/30/2021 3:20:33 PM	B84886
Copper	ND	0.0018	0.0050		mg/L	5	12/30/2021 3:20:33 PM	B84886
Lead	ND	0.00028	0.0025		mg/L	5	12/30/2021 3:20:33 PM	B84886
Selenium	ND	0.0017	0.0050		mg/L	5	12/30/2021 3:20:33 PM	B84886
Uranium	0.0087	0.00033	0.0025		mg/L	5	12/30/2021 3:20:33 PM	B84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/11/2022 1:31:45 PM	64935

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	6000	23	100		µg/L	100	12/21/2021 8:52:25 PM	R84721
Toluene	200	2.0	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
Ethylbenzene	1700	21	100		µg/L	100	12/21/2021 8:52:25 PM	R84721
Methyl tert-butyl ether (MTBE)	8.0	3.9	10	J	µg/L	10	12/21/2021 9:20:57 PM	R84721
1,2,4-Trimethylbenzene	870	1.2	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
1,3,5-Trimethylbenzene	210	1.8	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
1,2-Dichloroethane (EDC)	3.9	2.5	10	J	µg/L	10	12/21/2021 9:20:57 PM	R84721
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
Naphthalene	170	5.0	20		µg/L	10	12/21/2021 9:20:57 PM	R84721
1-Methylnaphthalene	63	8.4	40		µg/L	10	12/21/2021 9:20:57 PM	R84721
2-Methylnaphthalene	100	6.9	40		µg/L	10	12/21/2021 9:20:57 PM	R84721
Acetone	ND	25	100		µg/L	10	12/21/2021 9:20:57 PM	R84721
Bromomethane	ND	8.5	30		µg/L	10	12/21/2021 9:20:57 PM	R84721
2-Butanone	ND	20	100		µg/L	10	12/21/2021 9:20:57 PM	R84721
Chlorobenzene	ND	1.6	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
Chloroethane	ND	3.8	20		µg/L	10	12/21/2021 9:20:57 PM	R84721
Chloroform	4.1	1.3	10	J	µg/L	10	12/21/2021 9:20:57 PM	R84721
Chloromethane	ND	4.1	30		µg/L	10	12/21/2021 9:20:57 PM	R84721
cis-1,2-DCE	7.2	3.9	10	J	µg/L	10	12/21/2021 9:20:57 PM	R84721
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
1,1-Dichloroethane	17	2.7	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
1,1-Dichloroethene	ND	2.0	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
1,2-Dichloropropane	ND	2.0	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
2-Hexanone	ND	18	100		µg/L	10	12/21/2021 9:20:57 PM	R84721
Isopropylbenzene	62	1.8	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
4-Isopropyltoluene	8.0	2.0	10	J	µg/L	10	12/21/2021 9:20:57 PM	R84721
4-Methyl-2-pentanone	ND	8.8	100		µg/L	10	12/21/2021 9:20:57 PM	R84721
Methylene Chloride	ND	5.0	30		µg/L	10	12/21/2021 9:20:57 PM	R84721
n-Butylbenzene	12	2.5	30	J	µg/L	10	12/21/2021 9:20:57 PM	R84721
n-Propylbenzene	110	1.8	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
sec-Butylbenzene	5.7	1.4	10	J	µg/L	10	12/21/2021 9:20:57 PM	R84721
Styrene	ND	1.4	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
tert-Butylbenzene	ND	2.4	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
1,1,2-Trichloroethane	ND	2.0	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	12/21/2021 9:20:57 PM	R84721
Vinyl chloride	12	3.2	10		µg/L	10	12/21/2021 9:20:57 PM	R84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	6700	37	150		µg/L	100	12/21/2021 8:52:25 PM	R84721
Surr: 1,2-Dichloroethane-d4	94.8	0	70-130		%Rec	10	12/21/2021 9:20:57 PM	R84721
Surr: 4-Bromofluorobenzene	79.5	0	70-130		%Rec	10	12/21/2021 9:20:57 PM	R84721
Surr: Dibromofluoromethane	85.5	0	70-130		%Rec	10	12/21/2021 9:20:57 PM	R84721
Surr: Toluene-d8	104	0	70-130		%Rec	10	12/21/2021 9:20:57 PM	R84721
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	37	0.12	0.50		mg/L	10	12/21/2021 9:20:57 PM	G84721
Surr: 4-Bromofluorobenzene	87.9	0	70-130		%Rec	10	12/21/2021 9:20:57 PM	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.3	0.016	0.064		mg/L	1	12/27/2021 3:47:27 PM	64630
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/27/2021 3:47:27 PM	64630
Surr: DNOP	113	0	15-142		%Rec	1	12/27/2021 3:47:27 PM	64630

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/5/2022 9:37:00 AM	64659
Benzoic acid	ND	1.1	20		µg/L	1	1/5/2022 9:37:00 AM	64659
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/5/2022 9:37:00 AM	64659
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/5/2022 9:37:00 AM	64659
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/5/2022 9:37:00 AM	64659
Carbazole	1.1	0.56	5.0	J	µg/L	1	1/5/2022 9:37:00 AM	64659
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/5/2022 9:37:00 AM	64659
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/5/2022 9:37:00 AM	64659
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/5/2022 9:37:00 AM	64659
Diethyl phthalate	ND	3.9	10		µg/L	1	1/5/2022 9:37:00 AM	64659
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/5/2022 9:37:00 AM	64659
2,4-Dimethylphenol	15	0.97	5.0		µg/L	1	1/5/2022 9:37:00 AM	64659
2-Methylphenol	2.3	0.51	5.0	J	µg/L	1	1/5/2022 9:37:00 AM	64659
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/5/2022 9:37:00 AM	64659
Phenol	33	0.33	5.0		µg/L	1	1/5/2022 9:37:00 AM	64659
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/5/2022 9:37:00 AM	64659
Surr: 2-Fluorophenol	0	0	15-87	S	%Rec	1	1/5/2022 9:37:00 AM	64659
Surr: Phenol-d5	40.7	0	15-67.5		%Rec	1	1/5/2022 9:37:00 AM	64659
Surr: 2,4,6-Tribromophenol	79.5	0	15-122		%Rec	1	1/5/2022 9:37:00 AM	64659
Surr: Nitrobenzene-d5	61.9	0	15-103		%Rec	1	1/5/2022 9:37:00 AM	64659
Surr: 2-Fluorobiphenyl	61.2	0	15-103		%Rec	1	1/5/2022 9:37:00 AM	64659
Surr: 4-Terphenyl-d14	106	0	45-137		%Rec	1	1/5/2022 9:37:00 AM	64659
EPA METHOD 8270SIM							Analyst: **TOM**	
Naphthalene	110	0.34	1.0		µg/L	10	12/31/2021 5:27:00 AM	64684
1-Methylnaphthalene	43	0.24	1.0		µg/L	10	12/31/2021 5:27:00 AM	64684
2-Methylnaphthalene	71	0.34	1.0		µg/L	10	12/31/2021 5:27:00 AM	64684
Acenaphthene	ND	0.31	1.0	D	µg/L	10	12/31/2021 5:27:00 AM	64684
Fluorene	ND	0.31	1.0	D	µg/L	10	12/31/2021 5:27:00 AM	64684
Phenanthrene	2.0	0.57	1.0		µg/L	10	12/31/2021 5:27:00 AM	64684
Anthracene	4.0	0.34	1.0		µg/L	10	12/31/2021 5:27:00 AM	64684
Pyrene	ND	1.6	2.0	D	µg/L	10	12/31/2021 5:27:00 AM	64684
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	12/31/2021 5:27:00 AM	64684
Chrysene	ND	0.24	1.0	D	µg/L	10	12/31/2021 5:27:00 AM	64684
Surr: Nitrobenzene-d5	0	0	21.9-89.8	S	%Rec	10	12/31/2021 5:27:00 AM	64684
Surr: 2-Fluorobiphenyl	0	0	15-84.5	S	%Rec	10	12/31/2021 5:27:00 AM	64684
Surr: 4-Terphenyl-d14	0	0	73.1-152	S	%Rec	10	12/31/2021 5:27:00 AM	64684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-005E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Fluoride	0.66	0.20	0.50		mg/L	5	12/17/2021 6:57:41 PM	R84637
Chloride	870	25	50	*	mg/L	100	1/3/2022 5:20:39 PM	R84917
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	12/17/2021 6:57:41 PM	R84637
Nitrogen, Nitrate (As N)	ND	0.050	0.50		mg/L	5	12/17/2021 6:57:41 PM	R84637
Sulfate	ND	1.2	2.5		mg/L	5	12/17/2021 6:57:41 PM	R84637

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-005F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	8.9	0.033	0.060	*	mg/L	20	12/21/2021 2:26:45 PM	64648
Cadmium	ND	0.0015	0.0020		mg/L	1	12/21/2021 1:30:39 PM	64648
Chromium	ND	0.0021	0.0060		mg/L	1	12/21/2021 1:30:39 PM	64648
Iron	11	0.26	1.0	*	mg/L	20	12/21/2021 2:26:45 PM	64648
Manganese	4.9	0.016	0.040	*	mg/L	20	12/21/2021 2:26:45 PM	64648
Silver	ND	0.0013	0.0050		mg/L	1	12/21/2021 1:30:39 PM	64648
Zinc	0.0071	0.0064	0.010	J	mg/L	1	12/21/2021 1:30:39 PM	64648
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0071	0.00013	0.0010		mg/L	1	12/21/2021 2:27:30 PM	64648
Copper	0.0030	0.00040	0.0010		mg/L	1	12/21/2021 2:27:30 PM	64648
Lead	0.0011	0.000061	0.00050		mg/L	1	12/21/2021 2:27:30 PM	64648
Selenium	0.00045	0.00037	0.0010	J	mg/L	1	12/21/2021 2:27:30 PM	64648
Uranium	0.00043	0.000069	0.00050	J	mg/L	1	12/21/2021 2:27:30 PM	64648
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	12/27/2021 4:16:40 PM	64708

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-005G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	8.9	0.022	0.040	*	mg/L	20	12/17/2021 11:55:01 A	B84630
Cadmium	ND	0.00098	0.0020		mg/L	1	12/17/2021 11:52:11 A	B84630
Chromium	ND	0.0020	0.0060		mg/L	1	12/17/2021 11:52:11 A	B84630
Iron	7.7	0.21	0.40	*	mg/L	20	12/17/2021 11:55:01 A	B84630
Manganese	4.6	0.0029	0.010	*	mg/L	5	12/17/2021 11:53:34 A	B84630
Silver	ND	0.0013	0.0050		mg/L	1	12/17/2021 11:52:11 A	B84630
Zinc	0.010	0.0032	0.010		mg/L	1	12/17/2021 11:52:11 A	B84630
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0054	0.00012	0.0010		mg/L	1	12/29/2021 5:21:41 PM	B84856
Copper	ND	0.00037	0.0010		mg/L	1	12/29/2021 5:21:41 PM	B84856
Lead	ND	0.000057	0.00050		mg/L	1	12/29/2021 5:21:41 PM	B84856
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 3:23:14 PM	B84886
Uranium	0.00044	0.000065	0.00050	J	mg/L	1	12/29/2021 5:21:41 PM	B84856
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/11/2022 1:34:02 PM	64935

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:45:00 AM
Lab ID: 2112A87-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.34	0.23	1.0	J	µg/L	1	12/21/2021 9:49:29 PM	R84721
Toluene	ND	0.20	1.0		µg/L	1	12/21/2021 9:49:29 PM	R84721
Ethylbenzene	0.23	0.21	1.0	J	µg/L	1	12/21/2021 9:49:29 PM	R84721
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/21/2021 9:49:29 PM	R84721
1,2,4-Trimethylbenzene	0.33	0.12	1.0	J	µg/L	1	12/21/2021 9:49:29 PM	R84721
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/21/2021 9:49:29 PM	R84721
Acetone	ND	2.5	10		µg/L	1	12/21/2021 9:49:29 PM	R84721
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/21/2021 9:49:29 PM	R84721
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/21/2021 9:49:29 PM	R84721
Xylenes, Total	0.94	0.37	1.5	J	µg/L	1	12/21/2021 9:49:29 PM	R84721
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	12/21/2021 9:49:29 PM	R84721
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	12/21/2021 9:49:29 PM	R84721
Surr: Dibromofluoromethane	94.3	0	70-130		%Rec	1	12/21/2021 9:49:29 PM	R84721
Surr: Toluene-d8	100	0	70-130		%Rec	1	12/21/2021 9:49:29 PM	R84721
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.014	0.012	0.050	J	mg/L	1	12/21/2021 9:49:29 PM	G84721
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	12/21/2021 9:49:29 PM	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:45:00 AM
Lab ID: 2112A87-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	ND	0.016	0.064		mg/L	1	12/27/2021 4:10:54 PM	64630
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/27/2021 4:10:54 PM	64630
Surr: DNOP	104	0	15-142		%Rec	1	12/27/2021 4:10:54 PM	64630

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:45:00 AM
Lab ID: 2112A87-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	1/5/2022 2:56:14 PM	64659
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/5/2022 2:56:14 PM	64659
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/5/2022 2:56:14 PM	64659
Diethyl phthalate	ND	3.9	10		µg/L	1	1/5/2022 2:56:14 PM	64659
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/5/2022 2:56:14 PM	64659
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/5/2022 2:56:14 PM	64659
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/5/2022 2:56:14 PM	64659
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/5/2022 2:56:14 PM	64659
Phenol	ND	0.33	5.0		µg/L	1	1/5/2022 2:56:14 PM	64659
Surr: 2-Fluorophenol	63.8	0	15-87		%Rec	1	1/5/2022 2:56:14 PM	64659
Surr: Phenol-d5	46.5	0	15-67.5		%Rec	1	1/5/2022 2:56:14 PM	64659
Surr: 2,4,6-Tribromophenol	76.7	0	15-122		%Rec	1	1/5/2022 2:56:14 PM	64659
Surr: Nitrobenzene-d5	69.9	0	15-103		%Rec	1	1/5/2022 2:56:14 PM	64659
Surr: 2-Fluorobiphenyl	70.6	0	15-103		%Rec	1	1/5/2022 2:56:14 PM	64659
Surr: 4-Terphenyl-d14	107	0	45-137		%Rec	1	1/5/2022 2:56:14 PM	64659
EPA METHOD 8270SIM							Analyst: **TOM**	
Naphthalene	ND	0.034	0.10		µg/L	1	12/31/2021 6:12:00 AM	64684
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	12/31/2021 6:12:00 AM	64684
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	12/31/2021 6:12:00 AM	64684
Phenanthrene	ND	0.057	0.10		µg/L	1	12/31/2021 6:12:00 AM	64684
Surr: Nitrobenzene-d5	55.5	0	21.9-89.8		%Rec	1	12/31/2021 6:12:00 AM	64684
Surr: 2-Fluorobiphenyl	52.5	0	15-84.5		%Rec	1	12/31/2021 6:12:00 AM	64684
Surr: 4-Terphenyl-d14	104	0	73.1-152		%Rec	1	12/31/2021 6:12:00 AM	64684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:45:00 AM
Lab ID: 2112A87-006E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Nitrogen, Nitrite (As N)	ND	0.0053	0.10		mg/L	1	12/17/2021 7:23:27 PM	R84637

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:45:00 AM
Lab ID: 2112A87-006F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.013	0.0016	0.0030		mg/L	1	12/21/2021 1:43:57 PM	64648
Cadmium	ND	0.0015	0.0020		mg/L	1	12/21/2021 1:43:57 PM	64648
Chromium	ND	0.0021	0.0060		mg/L	1	12/21/2021 1:43:57 PM	64648
Iron	0.088	0.013	0.050		mg/L	1	12/21/2021 1:43:57 PM	64648
Manganese	0.015	0.00081	0.0020		mg/L	1	12/21/2021 1:43:57 PM	64648
Zinc	0.0091	0.0064	0.010	J	mg/L	1	12/21/2021 1:43:57 PM	64648
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0035	0.00013	0.0010		mg/L	1	12/21/2021 2:29:56 PM	64648
Copper	0.0015	0.00040	0.0010		mg/L	1	12/21/2021 2:29:56 PM	64648
Lead	0.000092	0.000061	0.00050	J	mg/L	1	12/21/2021 2:29:56 PM	64648
Selenium	0.00096	0.00037	0.0010	J	mg/L	1	12/21/2021 2:29:56 PM	64648
Uranium	0.0015	0.000069	0.00050		mg/L	1	12/21/2021 2:29:56 PM	64648
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	0.00016	0.00012	0.00020	J	mg/L	1	12/27/2021 4:23:09 PM	64708

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:45:00 AM
Lab ID: 2112A87-006G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.012	0.0011	0.0020		mg/L	1	12/17/2021 11:56:26 A	B84630
Cadmium	ND	0.00098	0.0020		mg/L	1	12/17/2021 11:56:26 A	B84630
Chromium	ND	0.0020	0.0060		mg/L	1	12/17/2021 11:56:26 A	B84630
Iron	0.049	0.010	0.020		mg/L	1	12/17/2021 11:56:26 A	B84630
Manganese	0.011	0.00058	0.0020		mg/L	1	12/17/2021 11:56:26 A	B84630
Zinc	0.015	0.0032	0.010		mg/L	1	12/17/2021 11:56:26 A	B84630
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0032	0.00012	0.0010		mg/L	1	12/29/2021 5:29:47 PM	B84856
Copper	ND	0.00037	0.0010		mg/L	1	12/29/2021 5:29:47 PM	B84856
Lead	ND	0.000057	0.00050		mg/L	1	12/29/2021 5:29:47 PM	B84856
Selenium	0.00062	0.00034	0.0010	J	mg/L	1	12/30/2021 3:25:55 PM	B84886
Uranium	0.0014	0.000065	0.00050		mg/L	1	12/29/2021 5:29:47 PM	B84856

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-3
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:45:00 AM
Lab ID: 2112A87-006H
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **Anat**	
Cyanide	ND	0.0100	0.0100		mg/L	1	12/23/2021 12:00:00 P	R84938

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021
Lab ID: 2112A87-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/29/2021 2:06:01 PM	R84851
Toluene	ND	0.20	1.0		µg/L	1	12/29/2021 2:06:01 PM	R84851
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/29/2021 2:06:01 PM	R84851
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/29/2021 2:06:01 PM	R84851
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/29/2021 2:06:01 PM	R84851
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 2:06:01 PM	R84851
Acetone	ND	2.5	10		µg/L	1	12/29/2021 2:06:01 PM	R84851
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 2:06:01 PM	R84851
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/29/2021 2:06:01 PM	R84851
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/29/2021 2:06:01 PM	R84851
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	12/29/2021 2:06:01 PM	R84851
Surr: 4-Bromofluorobenzene	98.6	0	70-130		%Rec	1	12/29/2021 2:06:01 PM	R84851
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	12/29/2021 2:06:01 PM	R84851
Surr: Toluene-d8	102	0	70-130		%Rec	1	12/29/2021 2:06:01 PM	R84851
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/29/2021 2:06:01 PM	G84851
Surr: 4-Bromofluorobenzene	110	0	70-130		%Rec	1	12/29/2021 2:06:01 PM	G84851

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021
Lab ID: 2112A87-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	ND	0.016	0.064		mg/L	1	12/28/2021 3:17:59 PM	64698
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 3:17:59 PM	64698
Surr: DNOP	95.3	0	15-142		%Rec	1	12/28/2021 3:17:59 PM	64698

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021
Lab ID: 2112A87-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	1/5/2022 3:37:43 PM	64659
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/5/2022 3:37:43 PM	64659
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/5/2022 3:37:43 PM	64659
Diethyl phthalate	ND	3.9	10		µg/L	1	1/5/2022 3:37:43 PM	64659
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/5/2022 3:37:43 PM	64659
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/5/2022 3:37:43 PM	64659
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/5/2022 3:37:43 PM	64659
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/5/2022 3:37:43 PM	64659
Phenol	ND	0.33	5.0		µg/L	1	1/5/2022 3:37:43 PM	64659
Surr: 2-Fluorophenol	65.2	0	15-87		%Rec	1	1/5/2022 3:37:43 PM	64659
Surr: Phenol-d5	51.7	0	15-67.5		%Rec	1	1/5/2022 3:37:43 PM	64659
Surr: 2,4,6-Tribromophenol	87.7	0	15-122		%Rec	1	1/5/2022 3:37:43 PM	64659
Surr: Nitrobenzene-d5	73.9	0	15-103		%Rec	1	1/5/2022 3:37:43 PM	64659
Surr: 2-Fluorobiphenyl	74.9	0	15-103		%Rec	1	1/5/2022 3:37:43 PM	64659
Surr: 4-Terphenyl-d14	121	0	45-137		%Rec	1	1/5/2022 3:37:43 PM	64659
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	1/5/2022 3:50:00 PM	64684
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	1/5/2022 3:50:00 PM	64684
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	1/5/2022 3:50:00 PM	64684
Phenanthrene	ND	0.057	0.10		µg/L	1	1/5/2022 3:50:00 PM	64684
Surr: Nitrobenzene-d5	65.5	0	21.9-89.8		%Rec	1	1/5/2022 3:50:00 PM	64684
Surr: 2-Fluorobiphenyl	68.5	0	15-84.5		%Rec	1	1/5/2022 3:50:00 PM	64684
Surr: 4-Terphenyl-d14	102	0	73.1-152		%Rec	1	1/5/2022 3:50:00 PM	64684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021
Lab ID: 2112A87-007E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Nitrogen, Nitrite (As N)	ND	0.0053	0.10		mg/L	1	12/17/2021 7:49:13 PM	R84637

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021
Lab ID: 2112A87-007F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.013	0.0016	0.0030		mg/L	1	12/21/2021 1:47:13 PM	64648
Cadmium	ND	0.0015	0.0020		mg/L	1	12/21/2021 1:47:13 PM	64648
Chromium	ND	0.0021	0.0060		mg/L	1	12/21/2021 1:47:13 PM	64648
Iron	0.19	0.013	0.050		mg/L	1	12/21/2021 1:47:13 PM	64648
Manganese	0.016	0.00081	0.0020		mg/L	1	12/21/2021 1:47:13 PM	64648
Zinc	0.021	0.0064	0.010		mg/L	1	12/21/2021 1:47:13 PM	64648
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0035	0.00013	0.0010		mg/L	1	12/21/2021 2:32:22 PM	64648
Copper	0.0045	0.00040	0.0010		mg/L	1	12/21/2021 2:32:22 PM	64648
Lead	0.00028	0.000061	0.00050	J	mg/L	1	12/21/2021 2:32:22 PM	64648
Selenium	0.00092	0.00037	0.0010	J	mg/L	1	12/21/2021 2:32:22 PM	64648
Uranium	0.0015	0.000069	0.00050		mg/L	1	12/21/2021 2:32:22 PM	64648
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	12/27/2021 4:25:20 PM	64708

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021
Lab ID: 2112A87-007G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.012	0.0011	0.0020		mg/L	1	12/17/2021 12:04:49 P	B84630
Cadmium	ND	0.00098	0.0020		mg/L	1	12/17/2021 12:04:49 P	B84630
Chromium	ND	0.0020	0.0060		mg/L	1	12/17/2021 12:04:49 P	B84630
Iron	0.050	0.010	0.020		mg/L	1	12/17/2021 12:04:49 P	B84630
Manganese	0.011	0.00058	0.0020		mg/L	1	12/17/2021 12:04:49 P	B84630
Zinc	0.036	0.0032	0.010		mg/L	1	12/17/2021 12:04:49 P	B84630
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0033	0.00012	0.0010		mg/L	1	12/29/2021 5:32:28 PM	B84856
Copper	0.00040	0.00037	0.0010	J	mg/L	1	12/29/2021 5:32:28 PM	B84856
Lead	ND	0.000057	0.00050		mg/L	1	12/29/2021 5:32:28 PM	B84856
Selenium	0.00088	0.00034	0.0010	J	mg/L	1	12/30/2021 3:28:36 PM	B84886
Uranium	0.0014	0.000065	0.00050		mg/L	1	12/29/2021 5:32:28 PM	B84856
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/11/2022 2:13:07 PM	64935

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021
Lab ID: 2112A87-007H
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **Anat**	
Cyanide	ND	0.0100	0.0100		mg/L	1	12/23/2021 12:00:00 P	R84938

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
Toluene	ND	0.20	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
1,2,4-Trimethylbenzene	0.12	0.12	1.0	J	µg/L	1	12/21/2021 10:46:37 P	R84721
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
Naphthalene	ND	0.50	2.0		µg/L	1	12/21/2021 10:46:37 P	R84721
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/21/2021 10:46:37 P	R84721
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/21/2021 10:46:37 P	R84721
Acetone	3.9	2.5	10	J	µg/L	1	12/21/2021 10:46:37 P	R84721
Bromomethane	ND	0.85	3.0		µg/L	1	12/21/2021 10:46:37 P	R84721
2-Butanone	ND	2.0	10		µg/L	1	12/21/2021 10:46:37 P	R84721
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
Chloroethane	ND	0.38	2.0		µg/L	1	12/21/2021 10:46:37 P	R84721
Chloroform	ND	0.13	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
Chloromethane	ND	0.41	3.0		µg/L	1	12/21/2021 10:46:37 P	R84721
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
2-Hexanone	ND	1.8	10		µg/L	1	12/21/2021 10:46:37 P	R84721
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/21/2021 10:46:37 P	R84721
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/21/2021 10:46:37 P	R84721
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/21/2021 10:46:37 P	R84721
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
Styrene	ND	0.14	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/21/2021 10:46:37 P	R84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/21/2021 10:46:37 P	R84721
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	12/21/2021 10:46:37 P	R84721
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	12/21/2021 10:46:37 P	R84721
Surr: Dibromofluoromethane	97.4	0	70-130		%Rec	1	12/21/2021 10:46:37 P	R84721
Surr: Toluene-d8	101	0	70-130		%Rec	1	12/21/2021 10:46:37 P	R84721
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/21/2021 10:46:37 P	G84721
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	12/21/2021 10:46:37 P	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-008C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	ND	0.016	0.064		mg/L	1	12/28/2021 3:41:40 PM	64698
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 3:41:40 PM	64698
Surr: DNOP	98.8	0	15-142		%Rec	1	12/28/2021 3:41:40 PM	64698

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-008D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/5/2022 4:19:30 PM	64659
Benzoic acid	ND	1.1	20		µg/L	1	1/5/2022 4:19:30 PM	64659
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/5/2022 4:19:30 PM	64659
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/5/2022 4:19:30 PM	64659
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/5/2022 4:19:30 PM	64659
Carbazole	ND	0.56	5.0		µg/L	1	1/5/2022 4:19:30 PM	64659
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/5/2022 4:19:30 PM	64659
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/5/2022 4:19:30 PM	64659
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/5/2022 4:19:30 PM	64659
Diethyl phthalate	ND	3.9	10		µg/L	1	1/5/2022 4:19:30 PM	64659
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/5/2022 4:19:30 PM	64659
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/5/2022 4:19:30 PM	64659
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/5/2022 4:19:30 PM	64659
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/5/2022 4:19:30 PM	64659
Phenol	ND	0.33	5.0		µg/L	1	1/5/2022 4:19:30 PM	64659
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/5/2022 4:19:30 PM	64659
Surr: 2-Fluorophenol	57.3	0	15-87		%Rec	1	1/5/2022 4:19:30 PM	64659
Surr: Phenol-d5	41.9	0	15-67.5		%Rec	1	1/5/2022 4:19:30 PM	64659
Surr: 2,4,6-Tribromophenol	86.3	0	15-122		%Rec	1	1/5/2022 4:19:30 PM	64659
Surr: Nitrobenzene-d5	65.5	0	15-103		%Rec	1	1/5/2022 4:19:30 PM	64659
Surr: 2-Fluorobiphenyl	60.4	0	15-103		%Rec	1	1/5/2022 4:19:30 PM	64659
Surr: 4-Terphenyl-d14	118	0	45-137		%Rec	1	1/5/2022 4:19:30 PM	64659
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	1/5/2022 4:37:00 PM	64684
Naphthalene	ND	0.034	0.10		µg/L	1	1/5/2022 4:37:00 PM	64684
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	1/5/2022 4:37:00 PM	64684
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	1/5/2022 4:37:00 PM	64684
Acenaphthene	ND	0.031	0.10		µg/L	1	1/5/2022 4:37:00 PM	64684
Fluorene	ND	0.031	0.10		µg/L	1	1/5/2022 4:37:00 PM	64684
Phenanthrene	ND	0.057	0.10		µg/L	1	1/5/2022 4:37:00 PM	64684
Anthracene	ND	0.034	0.10		µg/L	1	1/5/2022 4:37:00 PM	64684
Pyrene	ND	0.16	0.20		µg/L	1	1/5/2022 4:37:00 PM	64684
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	1/5/2022 4:37:00 PM	64684
Chrysene	ND	0.024	0.10		µg/L	1	1/5/2022 4:37:00 PM	64684
Surr: Nitrobenzene-d5	50.0	0	21.9-89.8		%Rec	1	1/5/2022 4:37:00 PM	64684
Surr: 2-Fluorobiphenyl	44.0	0	15-84.5		%Rec	1	1/5/2022 4:37:00 PM	64684
Surr: 4-Terphenyl-d14	94.0	0	73.1-152		%Rec	1	1/5/2022 4:37:00 PM	64684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-008E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Fluoride	ND	0.040	0.10		mg/L	1	12/17/2021 8:14:59 PM	R84637
Chloride	ND	0.25	0.50		mg/L	1	12/17/2021 8:14:59 PM	R84637
Nitrogen, Nitrite (As N)	ND	0.0053	0.10		mg/L	1	12/17/2021 8:14:59 PM	R84637
Nitrogen, Nitrate (As N)	0.031	0.010	0.10	J	mg/L	1	12/17/2021 8:14:59 PM	R84637
Sulfate	ND	0.25	0.50		mg/L	1	12/17/2021 8:14:59 PM	R84637

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-008F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	12/21/2021 1:50:31 PM	64648
Cadmium	ND	0.0015	0.0020		mg/L	1	12/21/2021 1:50:31 PM	64648
Chromium	ND	0.0021	0.0060		mg/L	1	12/21/2021 1:50:31 PM	64648
Iron	ND	0.013	0.050		mg/L	1	12/21/2021 1:50:31 PM	64648
Manganese	ND	0.00081	0.0020		mg/L	1	12/21/2021 1:50:31 PM	64648
Silver	ND	0.0013	0.0050		mg/L	1	12/21/2021 1:50:31 PM	64648
Zinc	ND	0.0064	0.010		mg/L	1	12/21/2021 1:50:31 PM	64648
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	ND	0.00013	0.0010		mg/L	1	12/21/2021 2:34:49 PM	64648
Copper	ND	0.00040	0.0010		mg/L	1	12/21/2021 2:34:49 PM	64648
Lead	ND	0.000061	0.00050		mg/L	1	12/21/2021 2:34:49 PM	64648
Selenium	ND	0.00037	0.0010		mg/L	1	12/21/2021 2:34:49 PM	64648
Uranium	ND	0.000069	0.00050		mg/L	1	12/21/2021 2:34:49 PM	64648
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	12/27/2021 4:27:31 PM	64708

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:15:00 AM
Lab ID: 2112A87-008G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	12/17/2021 12:08:06 P	B84630
Cadmium	ND	0.00098	0.0020		mg/L	1	12/17/2021 12:08:06 P	B84630
Chromium	ND	0.0020	0.0060		mg/L	1	12/17/2021 12:08:06 P	B84630
Iron	ND	0.010	0.020		mg/L	1	12/17/2021 12:08:06 P	B84630
Manganese	ND	0.00058	0.0020		mg/L	1	12/17/2021 12:08:06 P	B84630
Silver	ND	0.0013	0.0050		mg/L	1	12/17/2021 12:08:06 P	B84630
Zinc	0.024	0.0032	0.010		mg/L	1	12/17/2021 12:08:06 P	B84630
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	ND	0.00012	0.0010		mg/L	1	12/29/2021 5:35:10 PM	B84856
Copper	ND	0.00037	0.0010		mg/L	1	12/29/2021 5:35:10 PM	B84856
Lead	ND	0.000057	0.00050		mg/L	1	12/29/2021 5:35:10 PM	B84856
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 3:31:18 PM	B84886
Uranium	ND	0.000065	0.00050		mg/L	1	12/29/2021 5:35:10 PM	B84856
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/11/2022 1:40:54 PM	64935

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:45:00 AM
Lab ID: 2112A87-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
Toluene	ND	0.20	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
Naphthalene	ND	0.50	2.0		µg/L	1	12/21/2021 11:15:09 P	R84721
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/21/2021 11:15:09 P	R84721
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/21/2021 11:15:09 P	R84721
Acetone	4.2	2.5	10	J	µg/L	1	12/21/2021 11:15:09 P	R84721
Bromomethane	ND	0.85	3.0		µg/L	1	12/21/2021 11:15:09 P	R84721
2-Butanone	ND	2.0	10		µg/L	1	12/21/2021 11:15:09 P	R84721
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
Chloroethane	ND	0.38	2.0		µg/L	1	12/21/2021 11:15:09 P	R84721
Chloroform	ND	0.13	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
Chloromethane	ND	0.41	3.0		µg/L	1	12/21/2021 11:15:09 P	R84721
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
2-Hexanone	ND	1.8	10		µg/L	1	12/21/2021 11:15:09 P	R84721
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/21/2021 11:15:09 P	R84721
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/21/2021 11:15:09 P	R84721
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/21/2021 11:15:09 P	R84721
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
Styrene	ND	0.14	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/21/2021 11:15:09 P	R84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112A87**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 12/16/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/16/2021 10:45:00 AM
Lab ID: 2112A87-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/21/2021 11:15:09 P	R84721
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	12/21/2021 11:15:09 P	R84721
Surr: 4-Bromofluorobenzene	98.7	0	70-130		%Rec	1	12/21/2021 11:15:09 P	R84721
Surr: Dibromofluoromethane	96.9	0	70-130		%Rec	1	12/21/2021 11:15:09 P	R84721
Surr: Toluene-d8	101	0	70-130		%Rec	1	12/21/2021 11:15:09 P	R84721
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/21/2021 11:15:09 P	G84721
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	12/21/2021 11:15:09 P	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Anatek Labs, Inc.

1282 Alturas Drive - Moscow, ID 83843 - (208) 883-2839 - Fax (208) 8829246 - email moscow@anateklabs.com
504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - fax (509) 838-4433 - email spokane@anateklabs.com

Client:	Hall Environmental Analysis Lab	Work Order:	MBL0737
Address:	4901 Hawkins NE Suite D	Project:	2112A87
	Albuquerque, NM 87109	Reported:	1/5/2022 10:51
Attn:	Andy Freeman		

Analytical Results Report

Sample Location:	2112A87-006H (PW-3)		
Lab/Sample Number:	MBL0737-01	Collect Date:	12/16/21 10:45
Date Received:	12/22/21 13:59	Collected By:	
Matrix:	Water		

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics							
Cyanide	ND	mg/L	0.0100	12/23/21 12:00	BKP	EPA 335.4	

Anatek Labs, Inc.

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Analytical Results Report

(Continued)

Sample Location:	2112A87-007H (DUP 12/16/2021)		
Lab/Sample Number:	MBL0737-02	Collect Date:	12/16/21 00:00
Date Received:	12/22/21 13:59	Collected By:	
Matrix:	Water		

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics							
Cyanide	ND	mg/L	0.0100	12/23/21 12:00	BKP	EPA 335.4	

Authorized Signature,



Justin Doty For Todd Taruscio, Laboratory Manager

PQL	Practical Quantitation Limit
ND	Not Detected
MCL	EPA's Maximum Contaminant Level
Dry	Sample results reported on a dry weight basis
*	Not a state-certified analyte

This report shall not be reproduced except in full, without the written approval of the laboratory
The results reported related only to the samples indicated.

Anatek Labs, Inc.
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504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - fax (509) 838-4433 - email spokane@anateklabs.com

Quality Control Data

Inorganics

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBL0695 - Cyanide										
Blank (BBL0695-BLK1)					Prepared & Analyzed: 12/23/2021					
Cyanide	ND		0.0100	mg/L						
LCS (BBL0695-BS1)					Prepared & Analyzed: 12/23/2021					
Cyanide	0.482		0.0100	mg/L	0.500		96.5	90-110		
Matrix Spike (BBL0695-MS1)		**Source: MBL0737-01**			Prepared & Analyzed: 12/23/2021					
Cyanide	0.528		0.0100	mg/L	0.500	ND	106	90-110		
Matrix Spike Dup (BBL0695-MSD1)		**Source: MBL0737-01**			Prepared & Analyzed: 12/23/2021					
Cyanide	0.513		0.0100	mg/L	0.500	ND	103	90-110	2.94	25

Released to Imaging: 11/23/2022 10:23:25 AM

Received by OCD: 3/25/2022 3:35:30 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall I

MBL0737

Due: 01/07/22

Webs

SUB CONTRATOR: Anatek ID	COMPANY: Anatek Labs, Inc.		PHONE: (208) 883-2839	FAX: (208) 882-9246	
ADDRESS: 1282 Alturas Dr			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: Moscow, ID 83843					

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2112A87-006H	PW-3	500AMBHDP E-NAOH	Aqueous	12/16/2021 10:45:00 AM	1	Total Cyanide
2	2112A87-007H	DUP 12/16/2021	500AMBHDP E-NAOH	Aqueous	12/16/2021	1	Total Cyanide

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 12/17/2021	Time: 9:40 AM	Received By: JI	Date: 12/22/21	Time: 13:59
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

Anatek Labs, Inc.

Sample Receipt and Preservation Form

MBL0737

Due: 01/07/22

Client Name: Hall Project:

TAT: (Normal) RUSH: _____ days

Samples Received From: (FedEx) UPS USPS Client Courier Other: _____

Custody Seal on Cooler/Box: (Yes) No Custody Seals Intact: (Yes) No N/A

Number of Coolers/Boxes: 2 Type of Ice: Ice/(Ice Packs) Blue Ice Dry Ice None

Packing Material: (Bubble Wrap) Bags Foam/Peanuts None Other: _____

Cooler Temp As Read (°C): 2.0 Cooler Temp Corrected (°C): - Thermometer Used: IR-5

				Comments:
Samples Received Intact?	(Yes)	No	N/A	
Chain of Custody Present?	(Yes)	No	N/A	
Samples Received Within Hold Time?	(Yes)	No	N/A	
Samples Properly Preserved?	(Yes)	No	N/A	
VOC Vials Free of Headspace (<6mm)?	Yes	No	(N/A)	
VOC Trip Blanks Present?	Yes	No	(N/A)	
Labels and Chains Agree?	(Yes)	No	N/A	
Total Number of Sample Bottles Received: 2				

Chain of Custody Fully Completed?	(Yes)	No	N/A	
Correct Containers Received?	(Yes)	No	N/A	
Anatek Bottles Used?	Yes	(No)	Unknown	

Record preservatives (and lot numbers, if known) for containers below:

NaOH - Total Cyanide - p 500mL x2

Notes, comments, etc. (also use this space if contacting the client - record names and date/time)

Received/Inspected By: JI Date/Time: 12/22/21 13:59

Page 1 of 1

Form F19.00 - Eff 8 Feb 2019

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64647** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **64647** RunNo: **84702**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978348** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS-64647** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **64647** RunNo: **84702**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978349** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0030	0.002000	0	104	50	150			J
Cadmium	0.0021	0.0020	0.002000	0	105	50	150			
Chromium	0.0061	0.0060	0.006000	0	101	50	150			
Iron	0.023	0.050	0.02000	0	113	50	150			J
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Silver	0.0048	0.0050	0.005000	0	95.6	50	150			J

Sample ID: **LCS-64647** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **64647** RunNo: **84702**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978350** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	99.1	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.2	85	115			
Chromium	0.49	0.0060	0.5000	0	98.8	85	115			
Iron	0.48	0.050	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	96.1	85	115			
Silver	0.099	0.0050	0.1000	0	99.5	85	115			
Zinc	0.49	0.010	0.5000	0	97.6	85	115			

Sample ID: **MB-64648** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **64648** RunNo: **84702**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978351** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Cadmium	ND	0.0020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64648** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **64648** RunNo: **84702**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978351** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS-64648** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **64648** RunNo: **84702**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978355** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0023	0.0030	0.002000	0	116	50	150			J
Cadmium	0.0018	0.0020	0.002000	0	90.1	50	150			J
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Iron	0.023	0.050	0.02000	0	117	50	150			J
Manganese	0.0021	0.0020	0.002000	0	104	50	150			
Silver	0.0049	0.0050	0.005000	0	97.7	50	150			J
Zinc	0.012	0.010	0.01000	0	121	50	150			

Sample ID: **LCS-64648** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **64648** RunNo: **84702**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978356** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	97.9	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.5	85	115			
Chromium	0.49	0.0060	0.5000	0	97.8	85	115			
Iron	0.48	0.050	0.5000	0	96.6	85	115			
Manganese	0.48	0.0020	0.5000	0	95.4	85	115			
Silver	0.098	0.0050	0.1000	0	97.8	85	115			
Zinc	0.49	0.010	0.5000	0	97.8	85	115			

Sample ID: **LLLCS-64647** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **64647** RunNo: **84702**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978372** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.011	0.010	0.01000	0	114	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **2112A87-005FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-10** Batch ID: **64648** RunNo: **84702**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978474** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.51	0.0020	0.5000	0	103	70	130			
Chromium	0.53	0.0060	0.5000	0	105	70	130			
Silver	0.11	0.0050	0.1000	0	107	70	130			
Zinc	0.51	0.010	0.5000	0.007089	101	70	130			

Sample ID: **2112A87-005FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-10** Batch ID: **64648** RunNo: **84702**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978475** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	98.8	70	130	3.77	20	
Chromium	0.50	0.0060	0.5000	0	101	70	130	4.26	20	
Silver	0.10	0.0050	0.1000	0	103	70	130	3.71	20	
Zinc	0.49	0.010	0.5000	0.007089	97.5	70	130	3.74	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B84630** RunNo: **84630**
Prep Date: Analysis Date: **12/17/2021** SeqNo: **2975246** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B84630** RunNo: **84630**
Prep Date: Analysis Date: **12/17/2021** SeqNo: **2975250** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0020	0.002000	0	99.2	50	150			J
Cadmium	0.0023	0.0020	0.002000	0	113	50	150			
Chromium	0.0065	0.0060	0.006000	0	108	50	150			
Iron	0.024	0.020	0.02000	0	121	50	150			
Manganese	0.0022	0.0020	0.002000	0	109	50	150			
Silver	0.0053	0.0050	0.005000	0	106	50	150			
Zinc	0.012	0.010	0.01000	0	118	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B84630** RunNo: **84630**
Prep Date: Analysis Date: **12/17/2021** SeqNo: **2975251** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0020	0.5000	0	107	85	115			
Cadmium	0.53	0.0020	0.5000	0	105	85	115			
Chromium	0.53	0.0060	0.5000	0	106	85	115			
Iron	0.52	0.020	0.5000	0	103	85	115			
Manganese	0.51	0.0020	0.5000	0	102	85	115			
Silver	0.10	0.0050	0.1000	0	105	85	115			
Zinc	0.55	0.010	0.5000	0	110	85	115			

Sample ID: **2112A87-008GMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 12/16/2021** Batch ID: **B84630** RunNo: **84630**
Prep Date: Analysis Date: **12/17/2021** SeqNo: **2975267** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0020	0.5000	0	105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **2112A87-008GMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 12/16/2021** Batch ID: **B84630** RunNo: **84630**
Prep Date: Analysis Date: **12/17/2021** SeqNo: **2975267** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.53	0.0020	0.5000	0	106	70	130			
Chromium	0.54	0.0060	0.5000	0	108	70	130			
Iron	0.53	0.020	0.5000	0	105	70	130			
Manganese	0.51	0.0020	0.5000	0	102	70	130			
Silver	0.10	0.0050	0.1000	0	99.7	70	130			
Zinc	0.51	0.010	0.5000	0.02387	96.9	70	130			

Sample ID: **2112A87-008GMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 12/16/2021** Batch ID: **B84630** RunNo: **84630**
Prep Date: Analysis Date: **12/17/2021** SeqNo: **2975268** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0020	0.5000	0	108	70	130	2.59	20	
Cadmium	0.54	0.0020	0.5000	0	108	70	130	2.06	20	
Chromium	0.55	0.0060	0.5000	0	110	70	130	1.88	20	
Iron	0.52	0.020	0.5000	0	103	70	130	1.67	20	
Manganese	0.52	0.0020	0.5000	0	104	70	130	1.98	20	
Silver	0.10	0.0050	0.1000	0	103	70	130	3.58	20	
Zinc	0.52	0.010	0.5000	0.02387	99.2	70	130	2.18	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64647** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **64647** RunNo: **84708**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978613** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID: **MSLLLCS-64647** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **64647** RunNo: **84708**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978614** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00098	0.0010	0.001000	0	97.7	50	150			J
Copper	0.0014	0.0010	0.001000	0	139	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.00076	0.0010	0.001000	0	76.1	50	150			J
Uranium	0.00049	0.00050	0.0005000	0	97.2	50	150			J

Sample ID: **MSLCS-64647** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **64647** RunNo: **84708**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978615** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	99.0	85	115			
Copper	0.025	0.0010	0.02500	0	102	85	115			
Lead	0.012	0.00050	0.01250	0	99.7	85	115			
Selenium	0.024	0.0010	0.02500	0	97.8	85	115			
Uranium	0.012	0.00050	0.01250	0	99.7	85	115			

Sample ID: **MB-64648** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **64648** RunNo: **84708**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978617** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MSLLLCS-64648** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **64648** RunNo: **84708**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978618** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Copper	0.0011	0.0010	0.001000	0	107	50	150			
Lead	0.00050	0.00050	0.0005000	0	99.9	50	150			J
Selenium	0.0011	0.0010	0.001000	0	113	50	150			
Uranium	0.00050	0.00050	0.0005000	0	99.9	50	150			J

Sample ID: **MSLCS-64648** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **64648** RunNo: **84708**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978631** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Copper	0.025	0.0010	0.02500	0	102	85	115			
Lead	0.012	0.00050	0.01250	0	99.3	85	115			
Selenium	0.024	0.0010	0.02500	0	97.6	85	115			
Uranium	0.012	0.00050	0.01250	0	99.1	85	115			

Sample ID: **2112A87-004FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-11** Batch ID: **64648** RunNo: **84708**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978724** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.042	0.0050	0.02500	0.01389	114	70	130			
Copper	0.027	0.0050	0.02500	0	106	70	130			
Lead	0.012	0.0025	0.01250	0.0004695	94.5	70	130			
Selenium	0.027	0.0050	0.02500	0	107	70	130			
Uranium	0.023	0.0025	0.01250	0.009192	106	70	130			

Sample ID: **2112A87-004FMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-11** Batch ID: **64648** RunNo: **84708**
Prep Date: **12/20/2021** Analysis Date: **12/21/2021** SeqNo: **2978725** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.040	0.0050	0.02500	0.01389	106	70	130	4.76	20	
Copper	0.026	0.0050	0.02500	0	106	70	130	0.521	20	
Lead	0.012	0.0025	0.01250	0.0004695	95.2	70	130	0.808	20	
Selenium	0.026	0.0050	0.02500	0	102	70	130	4.37	20	
Uranium	0.023	0.0025	0.01250	0.009192	107	70	130	0.502	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B84856** RunNo: **84856**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984969** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Uranium	ND	0.00050								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B84856** RunNo: **84856**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984970** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Copper	0.00099	0.0010	0.001000	0	99.1	50	150			J
Lead	0.00049	0.00050	0.0005000	0	98.8	50	150			J
Uranium	0.00049	0.00050	0.0005000	0	97.3	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B84856** RunNo: **84856**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984971** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	102	85	115			
Copper	0.025	0.0010	0.02500	0	98.2	85	115			
Lead	0.012	0.00050	0.01250	0	97.4	85	115			
Uranium	0.012	0.00050	0.01250	0	94.7	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986045** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986046** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	101	50	150			
Copper	0.00099	0.0010	0.001000	0	98.8	50	150			J
Lead	0.00049	0.00050	0.0005000	0	98.0	50	150			J
Selenium	0.00087	0.0010	0.001000	0	86.5	50	150			J
Uranium	0.00048	0.00050	0.0005000	0	95.4	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986047** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Copper	0.024	0.0010	0.02500	0	95.2	85	115			
Lead	0.012	0.00050	0.01250	0	94.9	85	115			
Selenium	0.024	0.0010	0.02500	0	96.7	85	115			
Uranium	0.012	0.00050	0.01250	0	93.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**

26-Jan-22

Client: Marathon

Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64708** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **64708** RunNo: **84787**
Prep Date: **12/23/2021** Analysis Date: **12/27/2021** SeqNo: **2982001** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-64708** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **64708** RunNo: **84787**
Prep Date: **12/23/2021** Analysis Date: **12/27/2021** SeqNo: **2982002** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00016	0.00020	0.0001500	0	104	50	150			J

Sample ID: **LCS-64708** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **64708** RunNo: **84787**
Prep Date: **12/23/2021** Analysis Date: **12/27/2021** SeqNo: **2982003** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	85	115			

Sample ID: **2112A87-008FMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **EB 12/16/2021** Batch ID: **64708** RunNo: **84787**
Prep Date: **12/23/2021** Analysis Date: **12/27/2021** SeqNo: **2982183** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	75	125			

Sample ID: **2112A87-008FMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **EB 12/16/2021** Batch ID: **64708** RunNo: **84787**
Prep Date: **12/23/2021** Analysis Date: **12/27/2021** SeqNo: **2982184** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.4	75	125	2.33	20	

Sample ID: **MB-64935** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **64935** RunNo: **85065**
Prep Date: **1/10/2022** Analysis Date: **1/11/2022** SeqNo: **2992920** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCSLL-64935** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **64935** RunNo: **85065**
Prep Date: **1/10/2022** Analysis Date: **1/11/2022** SeqNo: **2992921** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00010	0.00020	0.0001500	0	66.8	50	150			J

Sample ID: **LCS-64935** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **64935** RunNo: **85065**
Prep Date: **1/10/2022** Analysis Date: **1/11/2022** SeqNo: **2992922** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	100	85	115			

Sample ID: **2112A87-007GMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP 12/16/2021** Batch ID: **64935** RunNo: **85065**
Prep Date: **1/10/2022** Analysis Date: **1/11/2022** SeqNo: **2992947** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	105	75	125			

Sample ID: **2112A87-007GMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP 12/16/2021** Batch ID: **64935** RunNo: **85065**
Prep Date: **1/10/2022** Analysis Date: **1/11/2022** SeqNo: **2992948** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	105	75	125	0.186	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R84637**	RunNo: **84637**
Prep Date:	Analysis Date: **12/17/2021**	SeqNo: **2976689** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R84637**	RunNo: **84637**
Prep Date:	Analysis Date: **12/17/2021**	SeqNo: **2976690** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	101	90	110			
Chloride	4.8	0.50	5.000	0	96.1	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	101	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			
Sulfate	9.6	0.50	10.00	0	95.9	90	110			

Sample ID: **2112A87-008EMS**	SampType: **ms**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 12/16/2021**	Batch ID: **R84637**	RunNo: **84637**
Prep Date:	Analysis Date: **12/17/2021**	SeqNo: **2976718** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.8	79.7	110			
Chloride	4.7	0.50	5.000	0	94.4	86.3	114			
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	98.3	83.4	105			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0.03090	102	93.5	110			
Sulfate	9.4	0.50	10.00	0	93.7	90.5	112			

Sample ID: **2112A87-008EMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 12/16/2021**	Batch ID: **R84637**	RunNo: **84637**
Prep Date:	Analysis Date: **12/17/2021**	SeqNo: **2976719** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	98.6	79.7	110	1.15	20	
Chloride	4.6	0.50	5.000	0	92.9	86.3	114	1.63	20	
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	96.8	83.4	105	1.52	20	
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.03090	100	93.5	110	1.63	20	
Sulfate	9.2	0.50	10.00	0	92.2	90.5	112	1.68	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R84917**	RunNo: **84917**							
Prep Date:	Analysis Date: **1/3/2022**	SeqNo: **2987352**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R84917**	RunNo: **84917**							
Prep Date:	Analysis Date: **1/3/2022**	SeqNo: **2987353**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.2	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64602** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **64602** RunNo: **84679**
Prep Date: **12/20/2021** Analysis Date: **12/20/2021** SeqNo: **2977428** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-64602** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **64602** RunNo: **84679**
Prep Date: **12/20/2021** Analysis Date: **12/20/2021** SeqNo: **2977429** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	111	70	130			

Sample ID: **LCSD-64602** SampType: **LCSD** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02** Batch ID: **64602** RunNo: **84679**
Prep Date: **12/20/2021** Analysis Date: **12/20/2021** SeqNo: **2977430** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.099	0.010	0.1000	0	99.2	70	130	11.0	20	

Sample ID: **MB-64602** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **64602** RunNo: **84679**
Prep Date: **12/20/2021** Analysis Date: **12/20/2021** SeqNo: **2977484** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64630**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **64630**	RunNo: **84780**							
Prep Date: **12/20/2021**	Analysis Date: **12/27/2021**	SeqNo: **2982614**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.035		0.03750		93.0	15	142			

Sample ID: **LCS-64630**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **64630**	RunNo: **84780**							
Prep Date: **12/20/2021**	Analysis Date: **12/27/2021**	SeqNo: **2982615**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	64.7	31.7	75.4			
Surr: DNOP	0.017		0.01875		89.5	15	142			

Sample ID: **LCSD-64630**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **64630**	RunNo: **84780**							
Prep Date: **12/20/2021**	Analysis Date: **12/27/2021**	SeqNo: **2982616**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.13	0.064	0.1875	0	69.7	31.7	75.4	7.47	20	
Surr: DNOP	0.018		0.01875		95.4	15	142	0	0	

Sample ID: **MB-64698**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **PBW**	Batch ID: **64698**	RunNo: **84809**							
Prep Date: **12/23/2021**	Analysis Date: **12/28/2021**	SeqNo: **2984402**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.032		0.03750		85.4	15	142			

Sample ID: **LCS-64698**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSW**	Batch ID: **64698**	RunNo: **84809**							
Prep Date: **12/23/2021**	Analysis Date: **12/28/2021**	SeqNo: **2984403**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	56.9	31.7	75.4			
Surr: DNOP	0.018		0.01875		94.3	15	142			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCSD-64698** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **64698** RunNo: **84809**
Prep Date: **12/23/2021** Analysis Date: **12/28/2021** SeqNo: **2984404** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	58.3	31.7	75.4	2.53	20	
Surr: DNOP	0.019		0.01875		99.8	15	142	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R84721** RunNo: **84721**
Prep Date: Analysis Date: **12/21/2021** SeqNo: **2979226** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.4	70	130			
Toluene	19	1.0	20.00	0	95.4	70	130			
Chlorobenzene	19	1.0	20.00	0	95.6	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	91.2	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.0	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Sample ID: **2112a87-001ams** SampType: **MS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-24** Batch ID: **R84721** RunNo: **84721**
Prep Date: Analysis Date: **12/21/2021** SeqNo: **2979230** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5000	10	200.0	4799	122	70	130			E
Toluene	220	10	200.0	17.52	103	70	130			
Chlorobenzene	210	10	200.0	0	103	70	130			
1,1-Dichloroethene	180	10	200.0	4.608	86.9	70	130			
Trichloroethene (TCE)	170	10	200.0	0	85.1	70	130			
Surr: 1,2-Dichloroethane-d4	90		100.0		89.7	70	130			
Surr: 4-Bromofluorobenzene	93		100.0		92.8	70	130			
Surr: Dibromofluoromethane	87		100.0		87.4	70	130			
Surr: Toluene-d8	100		100.0		101	70	130			

Sample ID: **2112a87-001amsd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-24** Batch ID: **R84721** RunNo: **84721**
Prep Date: Analysis Date: **12/21/2021** SeqNo: **2979231** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4800	10	200.0	4799	24.4	70	130	3.94	20	ES
Toluene	210	10	200.0	17.52	97.0	70	130	5.76	20	
Chlorobenzene	200	10	200.0	0	98.1	70	130	5.17	20	
1,1-Dichloroethene	160	10	200.0	4.608	80.1	70	130	7.94	20	
Trichloroethene (TCE)	160	10	200.0	0	80.1	70	130	6.06	20	
Surr: 1,2-Dichloroethane-d4	88		100.0		87.9	70	130	0	0	
Surr: 4-Bromofluorobenzene	93		100.0		92.7	70	130	0	0	
Surr: Dibromofluoromethane	85		100.0		85.2	70	130	0	0	
Surr: Toluene-d8	100		100.0		99.8	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R84721**	RunNo: **84721**
Prep Date:	Analysis Date: **12/21/2021**	SeqNo: **2979252** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **PBW**	Batch ID: **R84721**	RunNo: **84721**						
Prep Date:	Analysis Date: **12/21/2021**	SeqNo: **2979252**	Units: **µg/L**					

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.0	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **LCSW**	Batch ID: **R84759**	RunNo: **84759**						
Prep Date:	Analysis Date: **12/22/2021**	SeqNo: **2980804**	Units: **µg/L**					

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	20	1.0	20.00	0	98.5	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	9.9		10.00		98.9	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **PBW**	Batch ID: **R84759**	RunNo: **84759**						
Prep Date:	Analysis Date: **12/22/2021**	SeqNo: **2980822**	Units: **µg/L**					

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.8	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **LCSW**	Batch ID: **R84851**	RunNo: **84851**						
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984836**	Units: **µg/L**					

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	108	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.1	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R84851**	RunNo: **84851**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984865** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Acetone	ND	10								
n-Propylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.4	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64594**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **64594**	RunNo: **84906**
Prep Date: **12/17/2021**	Analysis Date: **1/3/2022**	SeqNo: **2986917** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Benzoic acid	ND	20								
Benzyl alcohol	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	10								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
Di-n-octyl phthalate	ND	20								
Dibenzofuran	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Phenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	130		200.0		62.6	15	87			
Surr: Phenol-d5	96		200.0		48.1	15	67.5			
Surr: 2,4,6-Tribromophenol	170		200.0		85.1	15	122			
Surr: Nitrobenzene-d5	77		100.0		77.4	15	103			
Surr: 2-Fluorobiphenyl	73		100.0		73.2	15	103			
Surr: 4-Terphenyl-d14	130		100.0		127	45	137			

Sample ID: **LCS-64594**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **64594**	RunNo: **84906**
Prep Date: **12/17/2021**	Analysis Date: **1/3/2022**	SeqNo: **2986918** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	69	5.0	100.0	0	68.8	15	87.6			
Phenol	100	5.0	200.0	0	52.2	16.8	70.5			
Surr: 2-Fluorophenol	130		200.0		62.7	15	87			
Surr: Phenol-d5	99		200.0		49.6	15	67.5			
Surr: 2,4,6-Tribromophenol	160		200.0		81.0	15	122			
Surr: Nitrobenzene-d5	86		100.0		86.2	15	103			
Surr: 2-Fluorobiphenyl	82		100.0		82.4	15	103			
Surr: 4-Terphenyl-d14	120		100.0		124	45	137			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCSD-64594** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **64594** RunNo: **84906**
Prep Date: **12/17/2021** Analysis Date: **1/3/2022** SeqNo: **2986919** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	72	5.0	100.0	0	71.6	15	87.6	4.04	30.4	
Phenol	110	5.0	200.0	0	52.7	16.8	70.5	0.916	37.2	
Surr: 2-Fluorophenol	130		200.0		64.6	15	87	0	0	
Surr: Phenol-d5	100		200.0		50.0	15	67.5	0	0	
Surr: 2,4,6-Tribromophenol	170		200.0		82.9	15	122	0	0	
Surr: Nitrobenzene-d5	83		100.0		83.3	15	103	0	0	
Surr: 2-Fluorobiphenyl	83		100.0		83.3	15	103	0	0	
Surr: 4-Terphenyl-d14	130		100.0		128	45	137	0	0	

Sample ID: **MB-64659** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **64659** RunNo: **84935**
Prep Date: **12/21/2021** Analysis Date: **1/5/2022** SeqNo: **2989266** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Benzoic acid	ND	20								
Benzyl alcohol	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	10								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
Di-n-octyl phthalate	ND	20								
Dibenzofuran	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Phenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	120		200.0		59.4	15	87			
Surr: Phenol-d5	89		200.0		44.7	15	67.5			
Surr: 2,4,6-Tribromophenol	170		200.0		85.4	15	122			
Surr: Nitrobenzene-d5	67		100.0		67.2	15	103			
Surr: 2-Fluorobiphenyl	69		100.0		68.6	15	103			
Surr: 4-Terphenyl-d14	110		100.0		113	45	137			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCS-64659** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **64659** RunNo: **84935**
Prep Date: **12/21/2021** Analysis Date: **1/5/2022** SeqNo: **2989267** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	77	5.0	100.0	0	77.5	15	87.6			
Phenol	110	5.0	200.0	0	55.1	16.8	70.5			
Surr: 2-Fluorophenol	140		200.0		69.3	15	87			
Surr: Phenol-d5	110		200.0		53.3	15	67.5			
Surr: 2,4,6-Tribromophenol	180		200.0		88.2	15	122			
Surr: Nitrobenzene-d5	81		100.0		80.5	15	103			
Surr: 2-Fluorobiphenyl	79		100.0		79.2	15	103			
Surr: 4-Terphenyl-d14	120		100.0		123	45	137			

Sample ID: **LCSD-64659** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **64659** RunNo: **84935**
Prep Date: **12/21/2021** Analysis Date: **1/5/2022** SeqNo: **2989268** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	71	5.0	100.0	0	70.9	15	87.6	8.91	30.4	
Phenol	99	5.0	200.0	0	49.6	16.8	70.5	10.6	37.2	
Surr: 2-Fluorophenol	130		200.0		63.9	15	87	0	0	
Surr: Phenol-d5	99		200.0		49.4	15	67.5	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		81.1	15	122	0	0	
Surr: Nitrobenzene-d5	82		100.0		82.1	15	103	0	0	
Surr: 2-Fluorobiphenyl	81		100.0		81.1	15	103	0	0	
Surr: 4-Terphenyl-d14	110		100.0		112	45	137	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb-64684** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64684** RunNo: **84909**
Prep Date: **12/22/2021** Analysis Date: **12/30/2021** SeqNo: **2987188** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Surr: Nitrobenzene-d5	2.3		4.000		58.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	5.3		8.000		66.5	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.0		4.000		49.0	15	84.5			
Surr: 4-Terphenyl-d14	4.1		4.000		103	73.1	152			

Sample ID: **lcs-64684** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64684** RunNo: **84909**
Prep Date: **12/22/2021** Analysis Date: **12/30/2021** SeqNo: **2987189** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.84	0.10	2.000	0	42.0	15	79.8			
Naphthalene	1.2	0.10	2.000	0	61.0	26.5	90.9			
1-Methylnaphthalene	1.3	0.10	2.000	0	63.0	27.9	88.2			
2-Methylnaphthalene	1.2	0.10	2.000	0	62.0	29.2	87.5			
Acenaphthene	1.4	0.10	2.000	0	68.0	25.6	93.9			
Fluorene	1.5	0.10	2.000	0	73.0	27.4	95.1			
Phenanthrene	1.5	0.10	2.000	0	76.0	25.1	104			
Anthracene	1.6	0.10	2.000	0	81.0	30.1	100			
Pyrene	1.8	0.20	2.000	0	89.0	34.5	112			
Benz(a)anthracene	2.3	0.10	2.000	0	117	43.9	132			
Chrysene	1.7	0.10	2.000	0	86.0	39.8	118			
Surr: Nitrobenzene-d5	4.2		5.000		84.8	21.9	89.8			
Surr: 2,4,6-Tribromophenol	7.6		10.00		75.6	23.4	71.6			S
Surr: 2-Fluorobiphenyl	3.5		5.000		69.6	15	84.5			
Surr: 4-Terphenyl-d14	5.6		5.000		112	73.1	152			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **lcsd-64684** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **64684** RunNo: **84909**
Prep Date: **12/22/2021** Analysis Date: **12/31/2021** SeqNo: **2987190** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.84	0.10	2.000	0	42.0	15	79.8	0	34.2	
Naphthalene	1.2	0.10	2.000	0	60.0	26.5	90.9	1.65	37.6	
1-Methylnaphthalene	1.2	0.10	2.000	0	61.0	27.9	88.2	3.23	33.1	
2-Methylnaphthalene	1.2	0.10	2.000	0	60.0	29.2	87.5	3.28	35.4	
Acenaphthene	1.3	0.10	2.000	0	66.0	25.6	93.9	2.99	36.3	
Fluorene	1.4	0.10	2.000	0	70.0	27.4	95.1	4.20	32.2	
Phenanthrene	1.5	0.10	2.000	0	73.0	25.1	104	4.03	32.9	
Anthracene	1.5	0.10	2.000	0	75.0	30.1	100	7.69	31.5	
Pyrene	1.7	0.20	2.000	0	84.0	34.5	112	5.78	23.3	
Benz(a)anthracene	2.1	0.10	2.000	0	106	43.9	132	9.87	29.5	
Chrysene	1.8	0.10	2.000	0	89.0	39.8	118	3.43	22.3	
Surr: Nitrobenzene-d5	3.9		5.000		78.4	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	6.9		10.00		68.6	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	3.2		5.000		64.4	15	84.5	0	0	
Surr: 4-Terphenyl-d14	5.7		5.000		114	73.1	152	0	0	

Sample ID: **mb-64693** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64693** RunNo: **84979**
Prep Date: **12/22/2021** Analysis Date: **1/5/2022** SeqNo: **2989841** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	1.9		4.000		48.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	3.3		8.000		41.5	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.7		4.000		43.5	15	84.5			
Surr: 4-Terphenyl-d14	4.0		4.000		101	73.1	152			

Sample ID: **lcs-64693** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64693** RunNo: **84979**
Prep Date: **12/22/2021** Analysis Date: **1/5/2022** SeqNo: **2989842** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.4		5.000		68.4	21.9	89.8			
Surr: 2,4,6-Tribromophenol	6.4		10.00		64.2	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.9		5.000		57.6	15	84.5			
Surr: 4-Terphenyl-d14	5.4		5.000		109	73.1	152			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **2.5ng gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G84721** RunNo: **84721**
Prep Date: Analysis Date: **12/21/2021** SeqNo: **2979255** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	96.7	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.9	70	130			

Sample ID: **2112a87-002ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-2R** Batch ID: **G84721** RunNo: **84721**
Prep Date: Analysis Date: **12/21/2021** SeqNo: **2979258** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	1.3	0.050	0.5000	0.5414	144	70	130			S
Surr: 4-Bromofluorobenzene	10		10.00		99.7	70	130			

Sample ID: **2112a87-002amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-2R** Batch ID: **G84721** RunNo: **84721**
Prep Date: Analysis Date: **12/21/2021** SeqNo: **2979259** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	1.2	0.050	0.5000	0.5414	131	70	130	5.34	20	S
Surr: 4-Bromofluorobenzene	9.8		10.00		98.1	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G84721** RunNo: **84721**
Prep Date: Analysis Date: **12/21/2021** SeqNo: **2979275** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			

Sample ID: **2.5ng gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G84851** RunNo: **84851**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984868** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G84851** RunNo: **84851**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984889** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112A87**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G84851**	RunNo: **84851**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984889** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2112A87** RcptNo: **1**

Received By: **Andy Freeman** 12/16/2021 7:55:00 PM

Completed By: **Desiree Dominguez** 12/17/2021 8:29:26 AM

Reviewed By: CL 12/17/21

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
   Samples were collected the same day and chilled.
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐ JM 12/17/21
8. Was preservative added to bottles? Yes ☑ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 24 (<2 or >12 unless noted)
Adjusted? yes
Checked by: JM 12/17/21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks: Samples 004-008 Did not receive sample voas for 504.1LF Analysis. DAD 12/17/21

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.5	Good				
2	7.7	Good				
3	5.8	Good				
4	8.1	Good				
5	4.1	Good				

0.4ml of HNO3 was added to sample 0086 for ph<2. JM 12/17/21.

Released to Imaging: 11/28/2022 10:22:25 AM
Received by OCD: 3/25/2022 3:35:30 PM

Chain-of-Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamesto' NM,87301

Phone #: 808-640-1823

email or Fax#:

QA/QC Package:
X Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

X EDD (Type)

X Standard Rush

Project Name:
2021 GW Sampling 4th Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Brian McLoughlin

Sampler:

On Ice: ☒ Yes ☐ No

# of Coolers: 5 - (corrected temps below (-0.2)

Cooler Temp(including CF): 4.5, 7.7, 5.8, 6.1, 4.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2112A87	See Analyte List	VOC	TPH GRO	TPH DRO/MRO	SVOC	1,4 Dioxane	WQCC METALS	cations/anions	nitrate/nitrate	8011 EDB	COD	Cyanide	TDS/TSS	General Chemistry	PFAS
12/16	8:50		MKTF-24			-001	X	X	X	X	X		X	X		X					
12/16	9:15		MKTF-2R			-002	X	X	X	X	X		X	X		X					
12/16	9:40		MKTF-31			-003	X	X	X	X	X		X	X		X					
12/16	10:00		MKTF-11			-004	X	X	X	X	X		X	X							
12/16	10:15		MKTF-10			-005	X	X	X	X	X		X	X							
12/16	10:45		PW-3			-006	X	X			X		X		X			X			
12/16	—		DUP 12/16/2021			-007	X	X			X		X		X			X			
12/16	10:15		EB 12/16/2021			-008	X	X	X	X	X		X	X							
12/16	10:45		~~FB~~ 12/16/2021			-009	X	X													
						~~-010~~ DAD 12.17.21															

Date	Time:	Relinquished by:	Received by:	Via:	Date	Time
12/16/21	13:00				12/16/21	1955
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

January 18, 2022

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL:
FAX

RE: 2021 GW Sampling 4th Quarter OrderNo.: 2112B70

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 10 sample(s) on 12/18/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE
Albuquerque, NM 87109
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Case Narrative

WO#: **2112B70**
Date: **1/18/2022**

CLIENT: Marathon
Project: 2021 GW Sampling 4th Quarter

Analytical Notes Regarding EPA Method 8270:
Pyridine is reported with an "E" flag. The "E" flag is used to represent an estimated value. Pyridine was not detected in the sample, but the calibration curve for this compound did not meet the method requirements.

"S" flags denote that the sample surrogate or spike result is outside of the acceptable limits due to sample dilution or matrix interferences.

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:10:00 PM
Lab ID: 2112B70-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	8900	110	500		µg/L	500	12/21/2021 11:43:36 P	R84721
Toluene	54	10	50		µg/L	50	12/22/2021 12:12:03 A	R84721
Ethylbenzene	1300	11	50		µg/L	50	12/22/2021 12:12:03 A	R84721
Methyl tert-butyl ether (MTBE)	21	20	50	J	µg/L	50	12/22/2021 12:12:03 A	R84721
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	12/22/2021 12:12:03 A	R84721
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	12/22/2021 12:12:03 A	R84721
1,2-Dichloroethane (EDC)	ND	13	50		µg/L	50	12/22/2021 12:12:03 A	R84721
1,2-Dibromoethane (EDB)	ND	15	50		µg/L	50	12/22/2021 12:12:03 A	R84721
Naphthalene	310	25	100		µg/L	50	12/22/2021 12:12:03 A	R84721
1-Methylnaphthalene	77	42	200	J	µg/L	50	12/22/2021 12:12:03 A	R84721
2-Methylnaphthalene	120	35	200	J	µg/L	50	12/22/2021 12:12:03 A	R84721
Acetone	ND	130	500		µg/L	50	12/22/2021 12:12:03 A	R84721
2-Butanone	ND	100	500		µg/L	50	12/22/2021 12:12:03 A	R84721
Chloroethane	ND	19	100		µg/L	50	12/22/2021 12:12:03 A	R84721
1,1-Dichloroethane	29	14	50	J	µg/L	50	12/22/2021 12:12:03 A	R84721
Isopropylbenzene	63	9.1	50		µg/L	50	12/22/2021 12:12:03 A	R84721
4-Isopropyltoluene	ND	10	50		µg/L	50	12/22/2021 12:12:03 A	R84721
Methylene Chloride	ND	25	150		µg/L	50	12/22/2021 12:12:03 A	R84721
n-Butylbenzene	23	13	150	J	µg/L	50	12/22/2021 12:12:03 A	R84721
n-Propylbenzene	190	9.1	50		µg/L	50	12/22/2021 12:12:03 A	R84721
sec-Butylbenzene	14	7.2	50	J	µg/L	50	12/22/2021 12:12:03 A	R84721
tert-Butylbenzene	ND	12	50		µg/L	50	12/22/2021 12:12:03 A	R84721
Xylenes, Total	160	19	75		µg/L	50	12/22/2021 12:12:03 A	R84721
Surr: 1,2-Dichloroethane-d4	98.9	0	70-130		%Rec	50	12/22/2021 12:12:03 A	R84721
Surr: 4-Bromofluorobenzene	95.4	0	70-130		%Rec	50	12/22/2021 12:12:03 A	R84721
Surr: Dibromofluoromethane	89.8	0	70-130		%Rec	50	12/22/2021 12:12:03 A	R84721
Surr: Toluene-d8	101	0	70-130		%Rec	50	12/22/2021 12:12:03 A	R84721
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	28	0.61	2.5		mg/L	50	12/22/2021 12:12:03 A	G84721
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	50	12/22/2021 12:12:03 A	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:10:00 PM
Lab ID: 2112B70-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.9	0.016	0.064		mg/L	1	12/28/2021 7:37:53 PM	64698
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 7:37:53 PM	64698
Surr: DNOP	96.5	0	15-142		%Rec	1	12/28/2021 7:37:53 PM	64698

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Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:10:00 PM
Lab ID: 2112B70-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	1/5/2022 5:00:51 PM	64659
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/5/2022 5:00:51 PM	64659
Carbazole	4.7	0.56	5.0	J	µg/L	1	1/5/2022 5:00:51 PM	64659
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/5/2022 5:00:51 PM	64659
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/5/2022 5:00:51 PM	64659
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/5/2022 5:00:51 PM	64659
2,4-Dimethylphenol	3.1	0.97	5.0	J	µg/L	1	1/5/2022 5:00:51 PM	64659
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/5/2022 5:00:51 PM	64659
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/5/2022 5:00:51 PM	64659
Phenol	30	0.33	5.0		µg/L	1	1/5/2022 5:00:51 PM	64659
Surr: 2-Fluorophenol	67.4	0	15-87		%Rec	1	1/5/2022 5:00:51 PM	64659
Surr: Phenol-d5	51.2	0	15-67.5		%Rec	1	1/5/2022 5:00:51 PM	64659
Surr: 2,4,6-Tribromophenol	106	0	15-122		%Rec	1	1/5/2022 5:00:51 PM	64659
Surr: Nitrobenzene-d5	79.6	0	15-103		%Rec	1	1/5/2022 5:00:51 PM	64659
Surr: 2-Fluorobiphenyl	75.7	0	15-103		%Rec	1	1/5/2022 5:00:51 PM	64659
Surr: 4-Terphenyl-d14	109	0	45-137		%Rec	1	1/5/2022 5:00:51 PM	64659
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	240	0.67	2.0		µg/L	20	1/7/2022 2:25:00 PM	64693
1-Methylnaphthalene	65	0.24	1.0		µg/L	10	1/6/2022 11:58:00 AM	64693
2-Methylnaphthalene	96	0.34	1.0		µg/L	10	1/6/2022 11:58:00 AM	64693
Acenaphthene	0.94	0.031	0.10		µg/L	1	1/6/2022 1:02:00 AM	64693
Fluorene	1.4	0.031	0.10		µg/L	1	1/6/2022 1:02:00 AM	64693
Phenanthrene	1.0	0.057	0.10		µg/L	1	1/6/2022 1:02:00 AM	64693
Fluoranthene	ND	0.10	0.20		µg/L	1	1/6/2022 1:02:00 AM	64693
Surr: Nitrobenzene-d5	9.00	0	21.9-89.8	S	%Rec	1	1/6/2022 1:02:00 AM	64693
Surr: 2-Fluorobiphenyl	47.5	0	15-84.5		%Rec	1	1/6/2022 1:02:00 AM	64693
Surr: 4-Terphenyl-d14	110	0	73.1-152		%Rec	1	1/6/2022 1:02:00 AM	64693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:10:00 PM
Lab ID: 2112B70-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.60	0.20	0.50		mg/L	5	12/20/2021 5:22:33 PM	A84688
Chloride	94	1.2	2.5		mg/L	5	12/20/2021 5:22:33 PM	A84688
Sulfate	ND	1.2	2.5		mg/L	5	12/20/2021 5:22:33 PM	A84688
Nitrate+Nitrite as N	ND	0.040	1.0		mg/L	5	12/20/2021 10:07:54 P	A84688

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:10:00 PM
Lab ID: 2112B70-001F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	4.3	0.0082	0.015	*	mg/L	5	12/22/2021 9:15:44 AM	64661
Cadmium	ND	0.0015	0.0020		mg/L	1	12/22/2021 9:14:17 AM	64661
Chromium	ND	0.0021	0.0060		mg/L	1	12/22/2021 9:14:17 AM	64661
Iron	6.6	0.13	0.50	*	mg/L	10	12/22/2021 10:20:13 A	64661
Manganese	1.0	0.0041	0.010	*	mg/L	5	12/22/2021 9:15:44 AM	64661
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 9:14:17 AM	64661
Zinc	ND	0.0064	0.010		mg/L	1	12/22/2021 9:14:17 AM	64661
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0086	0.00013	0.0010		mg/L	1	12/27/2021 1:28:51 PM	64661
Copper	ND	0.00040	0.0010		mg/L	1	12/27/2021 1:28:51 PM	64661
Lead	0.000094	0.000061	0.00050	J	mg/L	1	12/27/2021 1:28:51 PM	64661
Selenium	0.00039	0.00037	0.0010	J	mg/L	1	12/27/2021 1:28:51 PM	64661
Uranium	ND	0.000069	0.00050		mg/L	1	12/27/2021 1:28:51 PM	64661
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 1:18:32 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:10:00 PM
Lab ID: 2112B70-001G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	4.3	0.011	0.020	*	mg/L	10	12/22/2021 10:52:17 A	A84736
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2021 10:50:52 A	A84736
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2021 10:50:52 A	A84736
Iron	6.2	0.10	0.20	*	mg/L	10	12/22/2021 10:52:17 A	A84736
Manganese	1.0	0.0058	0.020	*	mg/L	10	12/22/2021 10:52:17 A	A84736
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 10:50:52 A	A84736
Zinc	0.020	0.0032	0.010		mg/L	1	12/22/2021 10:50:52 A	A84736
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0077	0.00012	0.0010		mg/L	1	12/29/2021 5:48:36 PM	B84856
Copper	ND	0.00037	0.0010		mg/L	1	12/29/2021 5:48:36 PM	B84856
Lead	ND	0.000057	0.00050		mg/L	1	12/29/2021 5:48:36 PM	B84856
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 3:39:24 PM	B84886
Uranium	0.00031	0.000065	0.00050	J	mg/L	1	12/29/2021 5:48:36 PM	B84856

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:40:00 PM
Lab ID: 2112B70-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	700	2.3	10		µg/L	10	12/22/2021 12:40:31 A	R84721
Toluene	2.1	2.0	10	J	µg/L	10	12/22/2021 12:40:31 A	R84721
Ethylbenzene	ND	2.1	10		µg/L	10	12/22/2021 12:40:31 A	R84721
Methyl tert-butyl ether (MTBE)	500	3.9	10		µg/L	10	12/22/2021 12:40:31 A	R84721
1,2,4-Trimethylbenzene	1.4	1.2	10	J	µg/L	10	12/22/2021 12:40:31 A	R84721
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	12/22/2021 12:40:31 A	R84721
1,2-Dichloroethane (EDC)	12	2.5	10		µg/L	10	12/22/2021 12:40:31 A	R84721
Naphthalene	ND	5.0	20		µg/L	10	12/22/2021 12:40:31 A	R84721
1-Methylnaphthalene	ND	8.4	40		µg/L	10	12/22/2021 12:40:31 A	R84721
2-Methylnaphthalene	ND	6.9	40		µg/L	10	12/22/2021 12:40:31 A	R84721
Acetone	ND	25	100		µg/L	10	12/22/2021 12:40:31 A	R84721
Bromomethane	ND	8.5	30		µg/L	10	12/22/2021 12:40:31 A	R84721
2-Butanone	ND	20	100		µg/L	10	12/22/2021 12:40:31 A	R84721
Chlorobenzene	ND	1.6	10		µg/L	10	12/22/2021 12:40:31 A	R84721
Chloroethane	ND	3.8	20		µg/L	10	12/22/2021 12:40:31 A	R84721
Chloroform	1.8	1.3	10	J	µg/L	10	12/22/2021 12:40:31 A	R84721
Chloromethane	ND	4.1	30		µg/L	10	12/22/2021 12:40:31 A	R84721
cis-1,2-DCE	18	3.9	10		µg/L	10	12/22/2021 12:40:31 A	R84721
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	12/22/2021 12:40:31 A	R84721
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	12/22/2021 12:40:31 A	R84721
1,1-Dichloroethane	95	2.7	10		µg/L	10	12/22/2021 12:40:31 A	R84721
1,1-Dichloroethene	55	2.0	10		µg/L	10	12/22/2021 12:40:31 A	R84721
1,2-Dichloropropane	ND	2.0	10		µg/L	10	12/22/2021 12:40:31 A	R84721
2-Hexanone	ND	18	100		µg/L	10	12/22/2021 12:40:31 A	R84721
Isopropylbenzene	4.3	1.8	10	J	µg/L	10	12/22/2021 12:40:31 A	R84721
4-Isopropyltoluene	ND	2.0	10		µg/L	10	12/22/2021 12:40:31 A	R84721
4-Methyl-2-pentanone	ND	8.8	100		µg/L	10	12/22/2021 12:40:31 A	R84721
Methylene Chloride	ND	5.0	30		µg/L	10	12/22/2021 12:40:31 A	R84721
n-Butylbenzene	ND	2.5	30		µg/L	10	12/22/2021 12:40:31 A	R84721
n-Propylbenzene	2.2	1.8	10	J	µg/L	10	12/22/2021 12:40:31 A	R84721
sec-Butylbenzene	1.7	1.4	10	J	µg/L	10	12/22/2021 12:40:31 A	R84721
Styrene	ND	1.4	10		µg/L	10	12/22/2021 12:40:31 A	R84721
tert-Butylbenzene	ND	2.4	10		µg/L	10	12/22/2021 12:40:31 A	R84721
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	12/22/2021 12:40:31 A	R84721
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	12/22/2021 12:40:31 A	R84721
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	12/22/2021 12:40:31 A	R84721
1,1,2-Trichloroethane	2.4	2.0	10	J	µg/L	10	12/22/2021 12:40:31 A	R84721
Trichloroethene (TCE)	11	2.0	10		µg/L	10	12/22/2021 12:40:31 A	R84721
Vinyl chloride	14	3.2	10		µg/L	10	12/22/2021 12:40:31 A	R84721
Xylenes, Total	ND	3.7	15		µg/L	10	12/22/2021 12:40:31 A	R84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:40:00 PM
Lab ID: 2112B70-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Surr: 1,2-Dichloroethane-d4	96.5	0	70-130		%Rec	10	12/22/2021 12:40:31 A	R84721
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	10	12/22/2021 12:40:31 A	R84721
Surr: Dibromofluoromethane	88.4	0	70-130		%Rec	10	12/22/2021 12:40:31 A	R84721
Surr: Toluene-d8	103	0	70-130		%Rec	10	12/22/2021 12:40:31 A	R84721
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	3.3	0.12	0.50		mg/L	10	12/22/2021 12:40:31 A	G84721
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	10	12/22/2021 12:40:31 A	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:40:00 PM
Lab ID: 2112B70-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	12/29/2021 2:57:03 PM	64767

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:40:00 PM
Lab ID: 2112B70-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.60	0.016	0.064		mg/L	1	12/28/2021 8:24:38 PM	64698
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 8:24:38 PM	64698
Surr: DNOP	83.2	0	15-142		%Rec	1	12/28/2021 8:24:38 PM	64698

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:40:00 PM
Lab ID: 2112B70-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/5/2022 5:42:21 PM	64659
Benzoic acid	ND	1.1	20		µg/L	1	1/5/2022 5:42:21 PM	64659
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/5/2022 5:42:21 PM	64659
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/5/2022 5:42:21 PM	64659
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/5/2022 5:42:21 PM	64659
Carbazole	ND	0.56	5.0		µg/L	1	1/5/2022 5:42:21 PM	64659
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/5/2022 5:42:21 PM	64659
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/5/2022 5:42:21 PM	64659
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/5/2022 5:42:21 PM	64659
Diethyl phthalate	ND	3.9	10		µg/L	1	1/5/2022 5:42:21 PM	64659
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/5/2022 5:42:21 PM	64659
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/5/2022 5:42:21 PM	64659
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/5/2022 5:42:21 PM	64659
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/5/2022 5:42:21 PM	64659
Phenol	16	0.33	5.0		µg/L	1	1/5/2022 5:42:21 PM	64659
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/5/2022 5:42:21 PM	64659
Surr: 2-Fluorophenol	70.0	0	15-87		%Rec	1	1/5/2022 5:42:21 PM	64659
Surr: Phenol-d5	53.3	0	15-67.5		%Rec	1	1/5/2022 5:42:21 PM	64659
Surr: 2,4,6-Tribromophenol	96.7	0	15-122		%Rec	1	1/5/2022 5:42:21 PM	64659
Surr: Nitrobenzene-d5	81.0	0	15-103		%Rec	1	1/5/2022 5:42:21 PM	64659
Surr: 2-Fluorobiphenyl	81.8	0	15-103		%Rec	1	1/5/2022 5:42:21 PM	64659
Surr: 4-Terphenyl-d14	107	0	45-137		%Rec	1	1/5/2022 5:42:21 PM	64659
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	52	0.48	10		µg/L	10	1/6/2022 12:44:00 PM	64693
Naphthalene	0.30	0.034	0.10		µg/L	1	1/6/2022 1:45:00 AM	64693
1-Methylnaphthalene	0.26	0.024	0.10		µg/L	1	1/6/2022 1:45:00 AM	64693
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	1/6/2022 1:45:00 AM	64693
Acenaphthene	0.18	0.031	0.10		µg/L	1	1/6/2022 1:45:00 AM	64693
Fluorene	ND	0.031	0.10		µg/L	1	1/6/2022 1:45:00 AM	64693
Phenanthrene	ND	0.057	0.10		µg/L	1	1/6/2022 1:45:00 AM	64693
Anthracene	ND	0.034	0.10		µg/L	1	1/6/2022 1:45:00 AM	64693
Pyrene	0.20	0.16	0.20		µg/L	1	1/6/2022 1:45:00 AM	64693
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	1/6/2022 1:45:00 AM	64693
Chrysene	ND	0.024	0.10		µg/L	1	1/6/2022 1:45:00 AM	64693
Surr: Nitrobenzene-d5	9.00	0	21.9-89.8	S	%Rec	1	1/6/2022 1:45:00 AM	64693
Surr: 2-Fluorobiphenyl	56.0	0	15-84.5		%Rec	1	1/6/2022 1:45:00 AM	64693
Surr: 4-Terphenyl-d14	96.5	0	73.1-152		%Rec	1	1/6/2022 1:45:00 AM	64693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:40:00 PM
Lab ID: 2112B70-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.20	0.50		mg/L	5	12/20/2021 6:12:10 PM	A84688
Chloride	770	12	25	*	mg/L	50	1/3/2022 6:58:01 PM	R84924
Sulfate	62	1.2	2.5		mg/L	5	12/20/2021 6:12:10 PM	A84688
Nitrate+Nitrite as N	ND	0.040	1.0		mg/L	5	12/20/2021 10:20:18 P	A84688

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:40:00 PM
Lab ID: 2112B70-002F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.31	0.0016	0.0030		mg/L	1	12/22/2021 9:17:06 AM	64661
Cadmium	ND	0.0015	0.0020		mg/L	1	12/22/2021 9:17:06 AM	64661
Chromium	ND	0.0021	0.0060		mg/L	1	12/22/2021 9:17:06 AM	64661
Iron	1.9	0.064	0.25	*	mg/L	5	12/22/2021 9:18:30 AM	64661
Manganese	2.8	0.0041	0.010	*	mg/L	5	12/22/2021 9:18:30 AM	64661
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 9:17:06 AM	64661
Zinc	ND	0.0064	0.010		mg/L	1	12/22/2021 9:17:06 AM	64661
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0035	0.00013	0.0010		mg/L	1	12/27/2021 3:12:41 PM	64661
Copper	0.0013	0.00040	0.0010		mg/L	1	12/27/2021 3:12:41 PM	64661
Lead	0.00036	0.000061	0.00050	J	mg/L	1	12/27/2021 3:12:41 PM	64661
Selenium	0.00077	0.00037	0.0010	J	mg/L	1	12/27/2021 3:12:41 PM	64661
Uranium	0.034	0.00034	0.0025	*	mg/L	5	12/27/2021 3:49:22 PM	64661
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 1:23:06 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 12:40:00 PM
Lab ID: 2112B70-002G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.29	0.0011	0.0020		mg/L	1	12/22/2021 10:53:43 A	A84736
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2021 10:53:43 A	A84736
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2021 10:53:43 A	A84736
Iron	0.033	0.010	0.020		mg/L	1	12/22/2021 10:53:43 A	A84736
Manganese	2.7	0.0058	0.020	*	mg/L	10	12/22/2021 10:55:24 A	A84736
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 10:53:43 A	A84736
Zinc	0.0075	0.0032	0.010	J	mg/L	1	12/22/2021 10:53:43 A	A84736
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0017	0.00012	0.0010		mg/L	1	12/29/2021 5:51:18 PM	B84856
Copper	0.00083	0.00037	0.0010	J	mg/L	1	12/29/2021 5:51:18 PM	B84856
Lead	ND	0.000057	0.00050		mg/L	1	12/29/2021 5:51:18 PM	B84856
Selenium	0.00044	0.00034	0.0010	J	mg/L	1	12/30/2021 3:42:05 PM	B84886
Uranium	0.033	0.00033	0.0025	*	mg/L	5	1/6/2022 12:42:56 PM	A84995
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 1:20:49 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:10:00 PM
Lab ID: 2112B70-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
Toluene	ND	0.20	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
Methyl tert-butyl ether (MTBE)	1.0	0.39	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
1,2,4-Trimethylbenzene	0.16	0.12	1.0	J	µg/L	1	12/22/2021 1:08:54 AM	R84721
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
1,2-Dichloroethane (EDC)	0.43	0.25	1.0	J	µg/L	1	12/22/2021 1:08:54 AM	R84721
Naphthalene	ND	0.50	2.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
Acetone	ND	2.5	10		µg/L	1	12/22/2021 1:08:54 AM	R84721
Bromomethane	ND	0.85	3.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
2-Butanone	ND	2.0	10		µg/L	1	12/22/2021 1:08:54 AM	R84721
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
Chloroethane	ND	0.38	2.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
Chloroform	ND	0.13	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
Chloromethane	ND	0.41	3.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
1,1-Dichloroethane	0.84	0.27	1.0	J	µg/L	1	12/22/2021 1:08:54 AM	R84721
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
2-Hexanone	ND	1.8	10		µg/L	1	12/22/2021 1:08:54 AM	R84721
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/22/2021 1:08:54 AM	R84721
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
Styrene	ND	0.14	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/22/2021 1:08:54 AM	R84721
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/22/2021 1:08:54 AM	R84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:10:00 PM
Lab ID: 2112B70-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	1	12/22/2021 1:08:54 AM	R84721
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	12/22/2021 1:08:54 AM	R84721
Surr: Dibromofluoromethane	98.9	0	70-130		%Rec	1	12/22/2021 1:08:54 AM	R84721
Surr: Toluene-d8	103	0	70-130		%Rec	1	12/22/2021 1:08:54 AM	R84721
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/22/2021 1:08:54 AM	G84721
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	12/22/2021 1:08:54 AM	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Project: 2021 GW Sampling 4th Quarter
Lab ID: 2112B70-003B

Client Sample ID: MKTF-40
Collection Date: 12/17/2021 1:10:00 PM
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	12/29/2021 3:12:06 PM	64767

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:10:00 PM
Lab ID: 2112B70-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.044	0.016	0.064	J	mg/L	1	12/28/2021 8:47:56 PM	64698
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 8:47:56 PM	64698
Surr: DNOP	102	0	15-142		%Rec	1	12/28/2021 8:47:56 PM	64698

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:10:00 PM
Lab ID: 2112B70-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/5/2022 6:23:40 PM	64659
Benzoic acid	ND	1.1	20		µg/L	1	1/5/2022 6:23:40 PM	64659
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/5/2022 6:23:40 PM	64659
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/5/2022 6:23:40 PM	64659
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/5/2022 6:23:40 PM	64659
Carbazole	ND	0.56	5.0		µg/L	1	1/5/2022 6:23:40 PM	64659
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/5/2022 6:23:40 PM	64659
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/5/2022 6:23:40 PM	64659
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/5/2022 6:23:40 PM	64659
Diethyl phthalate	ND	3.9	10		µg/L	1	1/5/2022 6:23:40 PM	64659
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/5/2022 6:23:40 PM	64659
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/5/2022 6:23:40 PM	64659
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/5/2022 6:23:40 PM	64659
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/5/2022 6:23:40 PM	64659
Pentachlorophenol	ND	0.59	20		µg/L	1	1/5/2022 6:23:40 PM	64659
Phenol	ND	0.33	5.0		µg/L	1	1/5/2022 6:23:40 PM	64659
Pyridine	ND	0.93	5.0	E	µg/L	1	1/5/2022 6:23:40 PM	64659
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/5/2022 6:23:40 PM	64659
Surr: 2-Fluorophenol	71.6	0	15-87		%Rec	1	1/5/2022 6:23:40 PM	64659
Surr: Phenol-d5	56.7	0	15-67.5		%Rec	1	1/5/2022 6:23:40 PM	64659
Surr: 2,4,6-Tribromophenol	54.1	0	15-122		%Rec	1	1/5/2022 6:23:40 PM	64659
Surr: Nitrobenzene-d5	74.8	0	15-103		%Rec	1	1/5/2022 6:23:40 PM	64659
Surr: 2-Fluorobiphenyl	70.5	0	15-103		%Rec	1	1/5/2022 6:23:40 PM	64659
Surr: 4-Terphenyl-d14	110	0	45-137		%Rec	1	1/5/2022 6:23:40 PM	64659
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	8.0	0.048	1.0		µg/L	1	1/6/2022 2:28:00 AM	64693
Naphthalene	0.14	0.034	0.10		µg/L	1	1/6/2022 2:28:00 AM	64693
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	1/6/2022 2:28:00 AM	64693
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	1/6/2022 2:28:00 AM	64693
Acenaphthene	ND	0.031	0.10		µg/L	1	1/6/2022 2:28:00 AM	64693
Fluorene	ND	0.031	0.10		µg/L	1	1/6/2022 2:28:00 AM	64693
Phenanthrene	ND	0.057	0.10		µg/L	1	1/6/2022 2:28:00 AM	64693
Anthracene	ND	0.034	0.10		µg/L	1	1/6/2022 2:28:00 AM	64693
Pyrene	ND	0.16	0.20		µg/L	1	1/6/2022 2:28:00 AM	64693
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	1/6/2022 2:28:00 AM	64693
Chrysene	ND	0.024	0.10		µg/L	1	1/6/2022 2:28:00 AM	64693
Surr: Nitrobenzene-d5	73.0	0	21.9-89.8		%Rec	1	1/6/2022 2:28:00 AM	64693
Surr: 2-Fluorobiphenyl	64.0	0	15-84.5		%Rec	1	1/6/2022 2:28:00 AM	64693
Surr: 4-Terphenyl-d14	106	0	73.1-152		%Rec	1	1/6/2022 2:28:00 AM	64693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:10:00 PM
Lab ID: 2112B70-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.20	0.50		mg/L	5	12/20/2021 6:36:59 PM	A84688
Chloride	3300	120	250	*	mg/L	500	1/3/2022 7:10:54 PM	R84924
Sulfate	500	5.0	10	*	mg/L	20	12/20/2021 7:14:13 PM	A84688
Nitrate+Nitrite as N	ND	0.16	4.0		mg/L	20	1/5/2022 9:03:56 PM	R84955

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:10:00 PM
Lab ID: 2112B70-003F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.086	0.0016	0.0030		mg/L	1	12/22/2021 10:25:52 A	64661
Cadmium	ND	0.0015	0.0020		mg/L	1	12/22/2021 10:25:52 A	64661
Chromium	ND	0.0021	0.0060		mg/L	1	12/22/2021 10:25:52 A	64661
Iron	0.95	0.013	0.050	*	mg/L	1	12/22/2021 10:25:52 A	64661
Manganese	0.026	0.00081	0.0020		mg/L	1	12/22/2021 10:25:52 A	64661
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 10:25:52 A	64661
Zinc	ND	0.0064	0.010		mg/L	1	12/22/2021 10:25:52 A	64661
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.00088	0.00063	0.0050	J	mg/L	5	12/27/2021 3:54:15 PM	64661
Copper	ND	0.0040	0.010		mg/L	10	12/27/2021 4:04:41 PM	64661
Lead	0.00083	0.00031	0.0025	J	mg/L	5	12/27/2021 3:54:15 PM	64661
Selenium	ND	0.0019	0.0050		mg/L	5	12/27/2021 3:54:15 PM	64661
Uranium	0.041	0.00034	0.0025	*	mg/L	5	12/27/2021 3:54:15 PM	64661
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 1:25:23 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:10:00 PM
Lab ID: 2112B70-003G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.063	0.0011	0.0020		mg/L	1	12/22/2021 10:57:01 A	A84736
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2021 10:57:01 A	A84736
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2021 10:57:01 A	A84736
Iron	ND	0.010	0.020		mg/L	1	12/22/2021 10:57:01 A	A84736
Manganese	0.00088	0.00058	0.0020	J	mg/L	1	12/22/2021 10:57:01 A	A84736
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 10:57:01 A	A84736
Zinc	0.0074	0.0032	0.010	J	mg/L	1	12/22/2021 10:57:01 A	A84736
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00065	0.00012	0.0010	J	mg/L	1	12/29/2021 5:53:59 PM	B84856
Copper	0.00070	0.00037	0.0010	J	mg/L	1	12/29/2021 5:53:59 PM	B84856
Lead	ND	0.000057	0.00050		mg/L	1	12/29/2021 5:53:59 PM	B84856
Selenium	ND	0.0017	0.0050		mg/L	5	12/30/2021 3:44:47 PM	B84886
Uranium	0.039	0.00033	0.0025	*	mg/L	5	12/30/2021 3:44:47 PM	B84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 1:32:15 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:30:00 PM
Lab ID: 2112B70-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	7.0	0.45	2.0		µg/L	2	12/22/2021 12:27:03 P	R84759
Toluene	0.65	0.40	2.0	J	µg/L	2	12/22/2021 12:27:03 P	R84759
Ethylbenzene	5.1	0.43	2.0		µg/L	2	12/22/2021 12:27:03 P	R84759
Methyl tert-butyl ether (MTBE)	5.2	0.79	2.0		µg/L	2	12/22/2021 12:27:03 P	R84759
1,2,4-Trimethylbenzene	1.5	0.24	2.0	J	µg/L	2	12/22/2021 12:27:03 P	R84759
1,3,5-Trimethylbenzene	4.4	0.36	2.0		µg/L	2	12/22/2021 12:27:03 P	R84759
Naphthalene	ND	1.0	4.0		µg/L	2	12/22/2021 12:27:03 P	R84759
1-Methylnaphthalene	ND	1.7	8.0		µg/L	2	12/22/2021 12:27:03 P	R84759
2-Methylnaphthalene	ND	1.4	8.0		µg/L	2	12/22/2021 12:27:03 P	R84759
Acetone	ND	5.0	20		µg/L	2	12/22/2021 12:27:03 P	R84759
2-Butanone	ND	4.1	20		µg/L	2	12/22/2021 12:27:03 P	R84759
Carbon disulfide	ND	1.2	20		µg/L	2	12/22/2021 12:27:03 P	R84759
Isopropylbenzene	0.89	0.37	2.0	J	µg/L	2	12/22/2021 12:27:03 P	R84759
4-Isopropyltoluene	0.50	0.40	2.0	J	µg/L	2	12/22/2021 12:27:03 P	R84759
Methylene Chloride	ND	1.0	6.0		µg/L	2	12/22/2021 12:27:03 P	R84759
n-Butylbenzene	ND	0.51	6.0		µg/L	2	12/22/2021 12:27:03 P	R84759
n-Propylbenzene	0.79	0.36	2.0	J	µg/L	2	12/22/2021 12:27:03 P	R84759
sec-Butylbenzene	0.47	0.29	2.0	J	µg/L	2	12/22/2021 12:27:03 P	R84759
tert-Butylbenzene	ND	0.49	2.0		µg/L	2	12/22/2021 12:27:03 P	R84759
Trichloroethene (TCE)	ND	0.41	2.0		µg/L	2	12/22/2021 12:27:03 P	R84759
Xylenes, Total	ND	0.74	3.0		µg/L	2	12/22/2021 12:27:03 P	R84759
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	2	12/22/2021 12:27:03 P	R84759
Surr: 4-Bromofluorobenzene	98.7	0	70-130		%Rec	2	12/22/2021 12:27:03 P	R84759
Surr: Dibromofluoromethane	99.0	0	70-130		%Rec	2	12/22/2021 12:27:03 P	R84759
Surr: Toluene-d8	104	0	70-130		%Rec	2	12/22/2021 12:27:03 P	R84759
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.20	0.024	0.10		mg/L	2	12/22/2021 3:58:49 AM	G84721
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	2	12/22/2021 3:58:49 AM	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:30:00 PM
Lab ID: 2112B70-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.6	0.016	0.065		mg/L	1	12/28/2021 9:11:31 PM	64698
Motor Oil Range Organics (MRO)	ND	0.053	0.081		mg/L	1	12/28/2021 9:11:31 PM	64698
Surr: DNOP	99.3	0	15-142		%Rec	1	12/28/2021 9:11:31 PM	64698

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:30:00 PM
Lab ID: 2112B70-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.088	0.0016	0.0030		mg/L	1	12/22/2021 12:10:49 P	64661
Cadmium	0.016	0.0015	0.0020	*	mg/L	1	12/22/2021 12:10:49 P	64661
Chromium	0.50	0.0021	0.0060	*	mg/L	1	12/22/2021 12:10:49 P	64661
Iron	330	6.4	25	*	mg/L	500	12/22/2021 10:28:43 A	64661
Manganese	15	0.016	0.040	*	mg/L	20	12/22/2021 10:27:19 A	64661
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 12:10:49 P	64661
Zinc	ND	0.0064	0.010		mg/L	1	12/22/2021 12:10:49 P	64661
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	ND	0.00013	0.0010		mg/L	20	12/27/2021 3:20:01 PM	64661
Copper	ND	0.00040	0.0010		mg/L	20	12/27/2021 3:20:01 PM	64661
Lead	ND	0.000061	0.00050		mg/L	20	12/27/2021 3:20:01 PM	64661
Selenium	ND	0.00037	0.0010		mg/L	20	12/27/2021 3:20:01 PM	64661
Uranium	ND	0.000069	0.00050		mg/L	20	12/27/2021 3:20:01 PM	64661
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 1:34:33 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:30:00 PM
Lab ID: 2112B70-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.074	0.0011	0.0020		mg/L	1	12/22/2021 11:00:19 A	A84736
Cadmium	0.013	0.00098	0.0020	*	mg/L	1	12/22/2021 11:00:19 A	A84736
Chromium	0.14	0.0020	0.0060	*	mg/L	1	12/22/2021 11:00:19 A	A84736
Iron	250	5.2	10	*	mg/L	500	12/22/2021 11:59:46 A	A84736
Manganese	15	0.012	0.040	*	mg/L	20	12/22/2021 11:58:24 A	A84736
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 11:00:19 A	A84736
Zinc	0.013	0.0032	0.010		mg/L	1	12/22/2021 11:00:19 A	A84736
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	ND	0.00061	0.0050		mg/L	5	12/30/2021 3:47:28 PM	B84886
Copper	ND	0.0018	0.0050		mg/L	5	12/30/2021 3:47:28 PM	B84886
Lead	ND	0.00028	0.0025		mg/L	5	12/30/2021 3:47:28 PM	B84886
Selenium	ND	0.0017	0.0050		mg/L	5	12/30/2021 3:47:28 PM	B84886
Uranium	0.00035	0.00033	0.0025	J	mg/L	5	12/30/2021 3:47:28 PM	B84886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:45:00 PM
Lab ID: 2112B70-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	150	2.3	10		µg/L	10	12/22/2021 1:53:16 PM	R84759
Toluene	5.6	2.0	10	J	µg/L	10	12/22/2021 1:53:16 PM	R84759
Ethylbenzene	39	2.1	10		µg/L	10	12/22/2021 1:53:16 PM	R84759
Methyl tert-butyl ether (MTBE)	ND	3.9	10		µg/L	10	12/22/2021 1:53:16 PM	R84759
1,2,4-Trimethylbenzene	17	1.2	10		µg/L	10	12/22/2021 1:53:16 PM	R84759
1,3,5-Trimethylbenzene	14	1.8	10		µg/L	10	12/22/2021 1:53:16 PM	R84759
Naphthalene	10	5.0	20	J	µg/L	10	12/22/2021 1:53:16 PM	R84759
1-Methylnaphthalene	ND	8.4	40		µg/L	10	12/22/2021 1:53:16 PM	R84759
2-Methylnaphthalene	ND	6.9	40		µg/L	10	12/22/2021 1:53:16 PM	R84759
Acetone	140	25	100		µg/L	10	12/22/2021 1:53:16 PM	R84759
2-Butanone	24	20	100	J	µg/L	10	12/22/2021 1:53:16 PM	R84759
Carbon disulfide	ND	5.9	100		µg/L	10	12/22/2021 1:53:16 PM	R84759
Isopropylbenzene	7.3	1.8	10	J	µg/L	10	12/22/2021 1:53:16 PM	R84759
4-Isopropyltoluene	3.6	2.0	10	J	µg/L	10	12/22/2021 1:53:16 PM	R84759
Methylene Chloride	ND	5.0	30		µg/L	10	12/22/2021 1:53:16 PM	R84759
n-Butylbenzene	2.8	2.5	30	J	µg/L	10	12/22/2021 1:53:16 PM	R84759
n-Propylbenzene	9.7	1.8	10	J	µg/L	10	12/22/2021 1:53:16 PM	R84759
sec-Butylbenzene	4.1	1.4	10	J	µg/L	10	12/22/2021 1:53:16 PM	R84759
tert-Butylbenzene	ND	2.4	10		µg/L	10	12/22/2021 1:53:16 PM	R84759
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	12/22/2021 1:53:16 PM	R84759
Xylenes, Total	23	3.7	15		µg/L	10	12/22/2021 1:53:16 PM	R84759
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	10	12/22/2021 1:53:16 PM	R84759
Surr: 4-Bromofluorobenzene	94.6	0	70-130		%Rec	10	12/22/2021 1:53:16 PM	R84759
Surr: Dibromofluoromethane	98.0	0	70-130		%Rec	10	12/22/2021 1:53:16 PM	R84759
Surr: Toluene-d8	101	0	70-130		%Rec	10	12/22/2021 1:53:16 PM	R84759
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.95	0.12	0.50		mg/L	10	12/22/2021 4:27:28 AM	G84721
Surr: 4-Bromofluorobenzene	99.3	0	70-130		%Rec	10	12/22/2021 4:27:28 AM	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:45:00 PM
Lab ID: 2112B70-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	2.9	0.016	0.064		mg/L	1	12/28/2021 9:35:04 PM	64698
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 9:35:04 PM	64698
Surr: DNOP	101	0	15-142		%Rec	1	12/28/2021 9:35:04 PM	64698

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:45:00 PM
Lab ID: 2112B70-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.19	0.0016	0.0030		mg/L	1	12/22/2021 12:12:15 P	64661
Cadmium	0.051	0.0015	0.0020	*	mg/L	1	12/22/2021 12:12:15 P	64661
Chromium	3.9	0.021	0.060	*	mg/L	10	12/22/2021 9:43:56 AM	64661
Iron	970	26	100	*	mg/L	2E+	12/22/2021 10:30:24 A	64661
Manganese	12	0.016	0.040	*	mg/L	20	12/22/2021 9:45:19 AM	64661
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 12:12:15 P	64661
Zinc	ND	0.0064	0.010		mg/L	1	12/22/2021 12:12:15 P	64661
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	ND	0.00013	0.0010		mg/L	20	12/27/2021 3:22:27 PM	64661
Copper	ND	0.00040	0.0010		mg/L	20	12/27/2021 3:22:27 PM	64661
Lead	ND	0.000061	0.00050		mg/L	20	12/27/2021 3:22:27 PM	64661
Selenium	ND	0.00037	0.0010		mg/L	20	12/27/2021 3:22:27 PM	64661
Uranium	ND	0.000069	0.00050		mg/L	20	12/27/2021 3:22:27 PM	64661
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 1:36:51 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:45:00 PM
Lab ID: 2112B70-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.18	0.0011	0.0020		mg/L	1	12/22/2021 11:09:25 A	A84736
Cadmium	0.052	0.00098	0.0020	*	mg/L	1	12/22/2021 11:09:25 A	A84736
Chromium	3.3	0.020	0.060	*	mg/L	10	12/22/2021 11:10:50 A	A84736
Iron	990	10	20	*	mg/L	1E+	12/22/2021 12:02:52 P	A84736
Manganese	11	0.012	0.040	*	mg/L	20	12/22/2021 12:09:25 P	A84736
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 11:09:25 A	A84736
Zinc	ND	0.0032	0.010		mg/L	1	12/22/2021 11:09:25 A	A84736
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	ND	0.00061	0.0050		mg/L	5	12/30/2021 3:50:09 PM	B84886
Copper	ND	0.0018	0.0050		mg/L	5	12/30/2021 3:50:09 PM	B84886
Lead	ND	0.00028	0.0025		mg/L	5	12/30/2021 3:50:09 PM	B84886
Selenium	ND	0.0017	0.0050		mg/L	5	12/30/2021 3:50:09 PM	B84886
Uranium	ND	0.00033	0.0025		mg/L	5	12/30/2021 3:50:09 PM	B84886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12/17/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021
Lab ID: 2112B70-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	6.9	0.23	1.0		µg/L	1	12/29/2021 3:32:16 PM	R84851
Toluene	0.66	0.20	1.0	J	µg/L	1	12/29/2021 3:32:16 PM	R84851
Ethylbenzene	5.0	0.21	1.0		µg/L	1	12/29/2021 3:32:16 PM	R84851
Methyl tert-butyl ether (MTBE)	5.2	0.39	1.0		µg/L	1	12/29/2021 3:32:16 PM	R84851
1,2,4-Trimethylbenzene	1.4	0.12	1.0		µg/L	1	12/29/2021 3:32:16 PM	R84851
1,3,5-Trimethylbenzene	4.2	0.18	1.0		µg/L	1	12/29/2021 3:32:16 PM	R84851
Naphthalene	0.77	0.50	2.0	J	µg/L	1	12/29/2021 3:32:16 PM	R84851
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/29/2021 3:32:16 PM	R84851
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/29/2021 3:32:16 PM	R84851
Acetone	5.0	2.5	10	J	µg/L	1	12/29/2021 3:32:16 PM	R84851
2-Butanone	ND	2.0	10		µg/L	1	12/29/2021 3:32:16 PM	R84851
Carbon disulfide	ND	0.59	10		µg/L	1	12/29/2021 3:32:16 PM	R84851
Isopropylbenzene	0.88	0.18	1.0	J	µg/L	1	12/29/2021 3:32:16 PM	R84851
4-Isopropyltoluene	0.42	0.20	1.0	J	µg/L	1	12/29/2021 3:32:16 PM	R84851
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/29/2021 3:32:16 PM	R84851
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/29/2021 3:32:16 PM	R84851
n-Propylbenzene	0.68	0.18	1.0	J	µg/L	1	12/29/2021 3:32:16 PM	R84851
sec-Butylbenzene	0.34	0.14	1.0	J	µg/L	1	12/29/2021 3:32:16 PM	R84851
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/29/2021 3:32:16 PM	R84851
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/29/2021 3:32:16 PM	R84851
Xylenes, Total	0.73	0.37	1.5	J	µg/L	1	12/29/2021 3:32:16 PM	R84851
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	12/29/2021 3:32:16 PM	R84851
Surr: 4-Bromofluorobenzene	93.5	0	70-130		%Rec	1	12/29/2021 3:32:16 PM	R84851
Surr: Dibromofluoromethane	96.5	0	70-130		%Rec	1	12/29/2021 3:32:16 PM	R84851
Surr: Toluene-d8	101	0	70-130		%Rec	1	12/29/2021 3:32:16 PM	R84851
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.16	0.012	0.050		mg/L	1	12/29/2021 3:32:16 PM	G84851
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	12/29/2021 3:32:16 PM	G84851

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12/17/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021
Lab ID: 2112B70-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.6	0.016	0.064		mg/L	1	12/28/2021 9:58:47 PM	64698
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 9:58:47 PM	64698
Surr: DNOP	101	0	15-142		%Rec	1	12/28/2021 9:58:47 PM	64698

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12/17/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021
Lab ID: 2112B70-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.079	0.0016	0.0030		mg/L	1	12/22/2021 12:13:38 P	64661
Cadmium	0.013	0.0015	0.0020	*	mg/L	1	12/22/2021 12:13:38 P	64661
Chromium	0.27	0.0021	0.0060	*	mg/L	1	12/22/2021 12:13:38 P	64661
Iron	300	6.4	25	*	mg/L	500	12/22/2021 10:33:26 A	64661
Manganese	16	0.016	0.040	*	mg/L	20	12/22/2021 10:32:05 A	64661
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 12:13:38 P	64661
Zinc	ND	0.0064	0.010		mg/L	1	12/22/2021 12:13:38 P	64661
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	ND	0.00013	0.0010		mg/L	20	12/27/2021 3:24:54 PM	64661
Copper	ND	0.00040	0.0010		mg/L	20	12/27/2021 3:24:54 PM	64661
Lead	ND	0.000061	0.00050		mg/L	20	12/27/2021 3:24:54 PM	64661
Selenium	ND	0.00037	0.0010		mg/L	20	12/27/2021 3:24:54 PM	64661
Uranium	ND	0.000069	0.00050		mg/L	20	12/27/2021 3:24:54 PM	64661
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/11/2022 1:57:06 PM	64935

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 12/17/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021
Lab ID: 2112B70-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.074	0.0011	0.0020		mg/L	1	12/22/2021 11:12:15 A	A84736
Cadmium	0.013	0.00098	0.0020	*	mg/L	1	12/22/2021 11:12:15 A	A84736
Chromium	0.13	0.0020	0.0060	*	mg/L	1	12/22/2021 11:12:15 A	A84736
Iron	270	5.2	10	*	mg/L	500	12/22/2021 12:16:09 P	A84736
Manganese	16	0.012	0.040	*	mg/L	20	12/22/2021 12:14:58 P	A84736
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 11:12:15 A	A84736
Zinc	0.0055	0.0032	0.010	J	mg/L	1	12/22/2021 11:12:15 A	A84736
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	ND	0.0024	0.020		mg/L	20	1/4/2022 3:44:44 PM	A84953
Copper	ND	0.0073	0.020		mg/L	20	1/4/2022 3:44:44 PM	A84953
Lead	ND	0.0011	0.010		mg/L	20	1/4/2022 3:44:44 PM	A84953
Selenium	ND	0.0069	0.020		mg/L	20	1/4/2022 3:44:44 PM	A84953
Uranium	ND	0.0013	0.010		mg/L	20	1/4/2022 3:44:44 PM	A84953

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 12/17/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:30:00 PM
Lab ID: 2112B70-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
Toluene	ND	0.20	1.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
Naphthalene	ND	0.50	2.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
Acetone	4.1	2.5	10	J	µg/L	1	12/22/2021 2:50:35 PM	R84759
2-Butanone	ND	2.0	10		µg/L	1	12/22/2021 2:50:35 PM	R84759
Carbon disulfide	ND	0.59	10		µg/L	1	12/22/2021 2:50:35 PM	R84759
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/22/2021 2:50:35 PM	R84759
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/22/2021 2:50:35 PM	R84759
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	12/22/2021 2:50:35 PM	R84759
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	12/22/2021 2:50:35 PM	R84759
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	12/22/2021 2:50:35 PM	R84759
Surr: Toluene-d8	102	0	70-130		%Rec	1	12/22/2021 2:50:35 PM	R84759
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/22/2021 5:24:41 AM	G84721
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	12/22/2021 5:24:41 AM	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Project: 2021 GW Sampling 4th Quarter
Lab ID: 2112B70-007B

Client Sample ID: EB 12/17/2021
Collection Date: 12/17/2021 1:30:00 PM
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.018	0.016	0.064	J	mg/L	1	12/28/2021 10:22:20 P	64698
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 10:22:20 P	64698
Surr: DNOP	105	0	15-142		%Rec	1	12/28/2021 10:22:20 P	64698

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 12/17/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:30:00 PM
Lab ID: 2112B70-007C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	12/22/2021 9:54:21 AM	64661
Cadmium	ND	0.0015	0.0020		mg/L	1	12/22/2021 9:54:21 AM	64661
Chromium	ND	0.0021	0.0060		mg/L	1	12/22/2021 9:54:21 AM	64661
Iron	ND	0.013	0.050		mg/L	1	12/22/2021 9:54:21 AM	64661
Manganese	ND	0.00081	0.0020		mg/L	1	12/22/2021 9:54:21 AM	64661
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 9:54:21 AM	64661
Zinc	ND	0.0064	0.010		mg/L	1	12/22/2021 9:54:21 AM	64661
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	ND	0.00013	0.0010		mg/L	1	12/27/2021 3:27:21 PM	64661
Copper	ND	0.00040	0.0010		mg/L	1	12/27/2021 3:27:21 PM	64661
Lead	ND	0.000061	0.00050		mg/L	1	12/27/2021 3:27:21 PM	64661
Selenium	ND	0.00037	0.0010		mg/L	1	12/27/2021 3:27:21 PM	64661
Uranium	ND	0.000069	0.00050		mg/L	1	12/27/2021 3:27:21 PM	64661
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 1:39:09 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 12/17/2021
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 1:30:00 PM
Lab ID: 2112B70-007D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	12/22/2021 11:16:42 A	A84736
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2021 11:16:42 A	A84736
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2021 11:16:42 A	A84736
Iron	ND	0.010	0.020		mg/L	1	12/22/2021 11:16:42 A	A84736
Manganese	ND	0.00058	0.0020		mg/L	1	12/22/2021 11:16:42 A	A84736
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 11:16:42 A	A84736
Zinc	0.012	0.0032	0.010		mg/L	1	12/22/2021 11:16:42 A	A84736
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	ND	0.00012	0.0010		mg/L	1	12/29/2021 6:10:09 PM	B84856
Copper	ND	0.00037	0.0010		mg/L	1	12/29/2021 6:10:09 PM	B84856
Lead	ND	0.000057	0.00050		mg/L	1	12/29/2021 6:10:09 PM	B84856
Selenium	ND	0.00034	0.0010		mg/L	1	12/29/2021 6:10:09 PM	B84856
Uranium	ND	0.000065	0.00050		mg/L	1	12/29/2021 6:10:09 PM	B84856

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2112B70-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
Toluene	ND	0.20	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
Naphthalene	ND	0.50	2.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
Acetone	ND	2.5	10		µg/L	1	12/22/2021 3:19:18 PM	R84759
Bromomethane	ND	0.85	3.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
2-Butanone	ND	2.0	10		µg/L	1	12/22/2021 3:19:18 PM	R84759
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
Chloroethane	ND	0.38	2.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
Chloroform	ND	0.13	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
Chloromethane	0.43	0.41	3.0	J	µg/L	1	12/22/2021 3:19:18 PM	R84759
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
2-Hexanone	ND	1.8	10		µg/L	1	12/22/2021 3:19:18 PM	R84759
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/22/2021 3:19:18 PM	R84759
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
Styrene	ND	0.14	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/22/2021 3:19:18 PM	R84759

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112B70**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2112B70-010A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/22/2021 3:19:18 PM	R84759
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	12/22/2021 3:19:18 PM	R84759
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	12/22/2021 3:19:18 PM	R84759
Surr: Dibromofluoromethane	97.9	0	70-130		%Rec	1	12/22/2021 3:19:18 PM	R84759
Surr: Toluene-d8	103	0	70-130		%Rec	1	12/22/2021 3:19:18 PM	R84759
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/22/2021 5:53:17 AM	G84721
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	12/22/2021 5:53:17 AM	G84721

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

January 13, 2022

Vista Work Order No. 2112187

Mr. Andy Freeman
Hall Environmental Analytical Laboratory
4901 Hawkins NE
Albuquerque, NM 87109

Dear Mr. Freeman,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on December 21, 2021 under your Project Name '2112B70'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at jfox@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Jamie Fox
Laboratory Director

Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 2112187
Case Narrative

Sample Condition on Receipt:

One groundwater sample and one aqueous sample were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The samples were received in good condition and within the recommended temperature requirements.

Analytical Notes:

PFAS Isotope Dilution Method

Sample "OW-63" contained particulate and was centrifuged prior to extraction.

The samples were extracted and analyzed for a selected list of PFAS using Vista's PFAS Isotope Dilution Method. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

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Sample Inventory Report

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Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2112187-01	OW-63	17-Dec-21 12:10	21-Dec-21 12:40	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2112187-02	FB PFAS	17-Dec-21 12:10	21-Dec-21 12:40	HDPE Bottle, 250 mL

Vista Project: 2112187

Client Project: 2112B70

ANALYTICAL RESULTS

Vista
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Sample ID: Method Blank **PFAS Isotope Dilution Method**

Client Data
Name: Hall Environmental Analytical Laboratory Matrix: Aqueous
Project: 2112B70

Laboratory Data
Lab Sample: B1L0170-BLK1 Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFPeA	2706-90-3	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFBS	375-73-5	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
4:2 FTS	757124-72-4	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFHxA	307-24-4	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFPeS	2706-91-4	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFHpA	375-85-9	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFHxS	355-46-4	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
6:2 FTS	27619-97-2	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFOA	335-67-1	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFHpS	375-92-8	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFNA	375-95-1	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFOSA	754-91-6	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFOS	1763-23-1	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFDA	335-76-2	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
8:2 FTS	39108-34-4	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFNS	68259-12-1	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
MeFOSAA	2355-31-9	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
EtFOSAA	2991-50-6	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFUnA	2058-94-8	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFDS	335-77-3	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFDoA	307-55-1	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFTrDA	72629-94-8	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
PFTeDA	376-06-7	ND	2.00		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	74.9	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C3-PFPeA	IS	81.2	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C3-PFBS	IS	87.1	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C2-4:2 FTS	IS	83.3	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C2-PFHxA	IS	83.9	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C4-PFHpA	IS	79.2	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C3-PFHxS	IS	84.1	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C2-6:2 FTS	IS	87.4	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C5-PFNA	IS	77.8	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C8-PFOSA	IS	40.7	10 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C2-PFOA	IS	76.5	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C8-PFOS	IS	83.2	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C2-PFDA	IS	79.8	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1

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Sample ID: Method Blank — **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2112B70
Matrix: Aqueous

Laboratory Data

Lab Sample: B1L0170-BLK1
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-8:2 FTS	IS	95.4	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
d3-MeFOSAA	IS	74.2	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C2-PFUnA	IS	78.8	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
d5-EtFOSAA	IS	76.1	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C2-PFDoA	IS	68.9	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1
13C2-PFTeDA	IS	64.2	20 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:04	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Vista
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Sample ID: OPR **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2112B70
Matrix: Aqueous

Laboratory Data

Lab Sample: B1L0170-BS1
Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	39.6	40.0	98.9	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFPeA	2706-90-3	39.1	40.0	97.8	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFBS	375-73-5	37.4	40.0	93.5	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
4:2 FTS	757124-72-4	41.2	40.0	103	60 - 145		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFHxA	307-24-4	40.9	40.0	102	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFPeS	2706-91-4	35.8	40.0	89.4	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFHpA	375-85-9	38.5	40.0	96.3	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFHxS	355-46-4	41.6	40.0	104	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
6:2 FTS	27619-97-2	36.9	40.0	92.1	60 - 140		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFOA	335-67-1	40.7	40.0	102	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFHpS	375-92-8	39.6	40.0	98.9	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFNA	375-95-1	40.1	40.0	100	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFOSA	754-91-6	37.2	40.0	92.9	65 - 140		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFOS	1763-23-1	37.9	40.0	94.8	65 - 140		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFDA	335-76-2	39.3	40.0	98.2	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
8:2 FTS	39108-34-4	35.8	40.0	89.5	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFNS	68259-12-1	36.9	40.0	92.2	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
MeFOSAA	2355-31-9	36.8	40.0	92.0	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
EtFOSAA	2991-50-6	39.0	40.0	97.6	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFUnA	2058-94-8	39.3	40.0	98.2	65 - 140		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFDS	335-77-3	34.5	40.0	86.3	50 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFDoA	307-55-1	38.4	40.0	95.9	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFTrDA	72629-94-8	37.5	40.0	93.8	60 - 140		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
PFTeDA	376-06-7	38.4	40.0	96.0	65 - 135		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	76.9	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C3-PFPeA	IS	83.4	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C3-PFBS	IS	84.4	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C2-4:2 FTS	IS	70.2	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C2-PFHxA	IS	83.9	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C4-PFHpA	IS	84.9	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C3-PFHxS	IS	82.7	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C2-6:2 FTS	IS	95.9	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C5-PFNA	IS	77.5	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C8-PFOSA	IS	40.4	10 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1

Vista
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Sample ID: OPR — **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2112B70
Matrix: Aqueous

Laboratory Data

Lab Sample: B1L0170-BS1
Column: BEH C18

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFOA	IS	77.5	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C8-PFOS	IS	86.5	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C2-PFDA	IS	78.9	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C2-8:2 FTS	IS	95.4	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
d3-MeFOSAA	IS	79.4	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C2-PFUnA	IS	76.3	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
d5-EtFOSAA	IS	71.4	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C2-PFDoA	IS	73.1	25 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1
13C2-PFTeDA	IS	65.5	20 - 150		B1L0170	28-Dec-21	0.250 L	30-Dec-21 08:14	1

Vista
an Enthalpy Analytical Laboratory

Sample ID: OW-63

PFAS Isotope Dilution Method

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2112B70
Location: 2112B70-001H
Matrix: Groundwater
Date Collected: 17-Dec-21 12:10

Laboratory Data

Lab Sample: 2112187-01
Date Received: 21-Dec-21 12:40
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	153	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFPeA	2706-90-3	464	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFBS	375-73-5	34.2	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
4:2 FTS	757124-72-4	ND	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFHxA	307-24-4	347	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFPeS	2706-91-4	37.4	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFHpA	375-85-9	114	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFHxS	355-46-4	237	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
6:2 FTS	27619-97-2	638	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFOA	335-67-1	106	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFHpS	375-92-8	9.26	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFNA	375-95-1	508	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFOSA	754-91-6	ND	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFOS	1763-23-1	454	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFDA	335-76-2	11.5	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
8:2 FTS	39108-34-4	51.1	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFNS	68259-12-1	ND	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
MeFOSAA	2355-31-9	ND	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
EtFOSAA	2991-50-6	ND	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFUnA	2058-94-8	86.6	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFDS	335-77-3	ND	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFDoA	307-55-1	ND	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFTrDA	72629-94-8	ND	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
PFTeDA	376-06-7	ND	1.96		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	27.0	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C3-PFPeA	IS	67.5	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C3-PFBS	IS	79.2	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C2-4:2 FTS	IS	64.3	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C2-PFHxA	IS	77.7	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C4-PFHpA	IS	79.6	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C3-PFHxS	IS	84.0	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C2-6:2 FTS	IS	88.1	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C5-PFNA	IS	75.9	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C8-PFOSA	IS	50.0	10 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C2-PFOA	IS	81.8	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C8-PFOS	IS	80.9	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1

Vista
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Sample ID: OW-63

PFAS Isotope Dilution Method

Client Data

Name:	Hall Environmental Analytical Laboratory	Matrix:	Groundwater
Project:	2112B70	Date Collected:	17-Dec-21 12:10
Location:	2112B70-001H		

Laboratory Data

Lab Sample:	2112187-01	Column:	BEH C18
Date Received:	21-Dec-21 12:40		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	75.6	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C2-8:2 FTS	IS	100	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
d3-MeFOSAA	IS	75.4	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C2-PFUnA	IS	74.5	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
d5-EtFOSAA	IS	74.2	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C2-PFDoA	IS	73.2	25 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1
13C2-PFTeDA	IS	62.8	20 - 150		B1L0170	28-Dec-21	0.255 L	30-Dec-21 11:18	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Vista
an Enthalpy Analytical Laboratory

Sample ID: FB PFAS

PFAS Isotope Dilution Method

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2112B70
Location: 2112B70-009A
Matrix: Aqueous
Date Collected: 17-Dec-21 12:10

Laboratory Data

Lab Sample: 2112187-02
Date Received: 21-Dec-21 12:40
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFPeA	2706-90-3	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFBS	375-73-5	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
4:2 FTS	757124-72-4	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFHxA	307-24-4	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFPeS	2706-91-4	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFHpA	375-85-9	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFHxS	355-46-4	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
6:2 FTS	27619-97-2	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFOA	335-67-1	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFHpS	375-92-8	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFNA	375-95-1	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFOSA	754-91-6	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFOS	1763-23-1	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFDA	335-76-2	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
8:2 FTS	39108-34-4	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFNS	68259-12-1	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
MeFOSAA	2355-31-9	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
EtFOSAA	2991-50-6	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFUnA	2058-94-8	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFDS	335-77-3	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFDoA	307-55-1	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFTrDA	72629-94-8	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
PFTeDA	376-06-7	ND	1.98		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	83.8	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C3-PFPeA	IS	88.4	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C3-PFBS	IS	89.5	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C2-4:2 FTS	IS	83.4	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C2-PFHxA	IS	85.8	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C4-PFHpA	IS	89.2	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C3-PFHxS	IS	90.7	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C2-6:2 FTS	IS	93.7	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C5-PFNA	IS	86.4	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C8-PFOSA	IS	58.8	10 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C2-PFOA	IS	83.3	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C8-PFOS	IS	91.2	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1

Vista
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Sample ID: FB PFAS

PFAS Isotope Dilution Method

Client Data

Name:	Hall Environmental Analytical Laboratory	Matrix:	Aqueous
Project:	2112B70	Date Collected:	17-Dec-21 12:10
Location:	2112B70-009A		

Laboratory Data

Lab Sample:	2112187-02	Column:	BEH C18
Date Received:	21-Dec-21 12:40		

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	89.1	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C2-8:2 FTS	IS	96.1	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
d3-MeFOSAA	IS	87.5	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C2-PFUnA	IS	79.0	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
d5-EtFOSAA	IS	81.5	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C2-PFDoA	IS	84.4	25 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1
13C2-PFTeDA	IS	76.7	20 - 150		B1L0170	28-Dec-21	0.252 L	30-Dec-21 11:29	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
RL	For 537.1, the reported RLs are the MRLs.
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculation that uses the detection limit as the concentration for non-detects
TEQMin	TEQ calculation that uses zero as the concentration for non-detects
TEQRisk	TEQ calculation that uses ½ the detection limit as the concentration for non-detects
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-26
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1980678
New Hampshire Environmental Accreditation Program	207720
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-016
Pennsylvania Department of Environmental Protection	017
Texas Commission on Environmental Quality	T104704189-21-12
Vermont Department of Health	VT-4042
Virginia Department of General Services	10769
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p- Dioxins & Polychlorinated Dibenzofurans	EPA 23
Polychlorinated Dibenzodioxins in Ambient Air by GC/HRMS	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613/1613B
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537.1
Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry	EPA 533
Perfluorooctanesulonate (PFOS) and Perfluorooctanoate (PFOA) - Method for Unfiltered Samples Using Solid Phase Extraction and Liquid Chromatography/Mass Spectrometry	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

2112187

0.4°C

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRACTOR: Vista Analytical Labor	COMPANY: Vista Analytical Laboratory	PHONE: (916) 673-1520	FAX:
ADDRESS: 1104 Windfield Way		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: El Dorado Hills, CA 95762			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2112B70-001H	OW-63	250HDPE	Groundwater	12/17/2021 12:10 00 PM	2	24 Compound PFAS testing- unchlorinated water
2	2112B70-009A	FB PFAS	250HDPE	Aqueous	12/17/2021 12:10 00 PM	1	24 Compound PFAS testing- unchlorinated water

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 12/20/2021	Time: 12:39 PM	Received By: Justin Briones	Date: 12/21/21	Time: 1240
Relinquished By:	Date:	Time	Received By	Date:	Time:
Relinquished By:	Date:	Time	Received By:	Date:	Time:

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2112187 TAT Std

Samples Arrival:	**Date/Time** 12/21/21 1240		**Initials:**		**Location:** WR-2 **Shelf/Rack:** N/A		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	Ice	(Blue Ice)		Techni Ice	Dry Ice	None	
Temp °C: 0.6 (uncorrected) **Temp °C:** 0.4 (corrected)	**Probe used: Y / (N)**			**Thermometer ID:** IR-4			

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill — Trk # 7755 5617 2094	✓		
Shipping Documentation Present?	✓		
Shipping Container: Vista / (Client) / Retain / (Return) / Dispose			
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** 12/22/21 17:49	**Initials:** KM	**Location:** R-13, WR-2 **Shelf/Rack:** A-2, R-4
COC Anomaly/Sample Acceptance Form completed?		✓	✓

Comments:

CoC/Label Reconciliation Report WO# 2112187

LabNumber	CoC Sample ID		SampleAlias	Sample Date/Time		Container	BaseMatrix	Sample Comments
2112187-01	A OW-63	B ☑	2112B70-001H	17-Dec-21 12:10	☑	HDPE Bottle, 250 mL	Aqueous	
2112187-01	B OW-63	☑	2112B70-001H	17-Dec-21 12:10	☑	HDPE Bottle, 250 mL	Aqueous	
2112187-02	A FB PFAS	☑ A	2112B70-009A	17-Dec-21 12:10	☐	HDPE Bottle, 250 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Adequate Sample Volume?	✓		
Container Type Appropriate for Analysis(es)	✓		

Comments: A) No backup volume received
B) ESS Trizma label.

Preservation Documented: Na2S2O3 (Trizma B) NH4CH3CO2 None Other

Verifed by/Date: YA 12/22/21

Released to Imaging: 11/23/2022 10:23:25 AM

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64661** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **64661** RunNo: **84736**
Prep Date: **12/21/2021** Analysis Date: **12/22/2021** SeqNo: **2979907** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS-64661** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **64661** RunNo: **84736**
Prep Date: **12/21/2021** Analysis Date: **12/22/2021** SeqNo: **2979909** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0023	0.0030	0.002000	0	115	50	150			J
Cadmium	0.0023	0.0020	0.002000	0	115	50	150			
Chromium	0.0060	0.0060	0.006000	0	100	50	150			
Iron	0.021	0.050	0.02000	0	106	50	150			J
Manganese	0.0021	0.0020	0.002000	0	106	50	150			
Silver	0.0051	0.0050	0.005000	0	102	50	150			
Zinc	0.011	0.010	0.01000	0	108	50	150			

Sample ID: **LCS-64661** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **64661** RunNo: **84736**
Prep Date: **12/21/2021** Analysis Date: **12/22/2021** SeqNo: **2979925** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	99.5	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.2	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Iron	0.50	0.050	0.5000	0	99.2	85	115			
Manganese	0.48	0.0020	0.5000	0	96.4	85	115			
Silver	0.099	0.0050	0.1000	0	99.4	85	115			
Zinc	0.50	0.010	0.5000	0	99.5	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A84736** RunNo: **84736**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2979931** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **A84736**	RunNo: **84736**
Prep Date:	Analysis Date: **12/22/2021**	SeqNo: **2979931** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **A84736**	RunNo: **84736**
Prep Date:	Analysis Date: **12/22/2021**	SeqNo: **2979933** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0030	0.002000	0	90.7	50	150			J
Cadmium	0.0023	0.0020	0.002000	0	114	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Iron	0.022	0.050	0.02000	0	109	50	150			J
Manganese	0.0020	0.0020	0.002000	0	100	50	150			
Silver	0.0048	0.0050	0.005000	0	95.8	50	150			J
Zinc	0.011	0.010	0.01000	0	108	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **A84736**	RunNo: **84736**
Prep Date:	Analysis Date: **12/22/2021**	SeqNo: **2979935** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	105	85	115			
Cadmium	0.53	0.0020	0.5000	0	106	85	115			
Chromium	0.53	0.0060	0.5000	0	105	85	115			
Iron	0.51	0.050	0.5000	0	101	85	115			
Manganese	0.51	0.0020	0.5000	0	102	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Zinc	0.55	0.010	0.5000	0	109	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A84736** RunNo: **84736**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2979932** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A84736** RunNo: **84736**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2979934** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	90.7	50	150			J
Cadmium	0.0023	0.0020	0.002000	0	114	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Iron	0.022	0.020	0.02000	0	109	50	150			
Manganese	0.0020	0.0020	0.002000	0	100	50	150			
Silver	0.0048	0.0050	0.005000	0	95.8	50	150			J
Zinc	0.011	0.010	0.01000	0	108	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A84736** RunNo: **84736**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2979936** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0020	0.5000	0	105	85	115			
Cadmium	0.53	0.0020	0.5000	0	106	85	115			
Chromium	0.53	0.0060	0.5000	0	105	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.51	0.0020	0.5000	0	102	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Zinc	0.55	0.010	0.5000	0	109	85	115			

Sample ID: **2112B70-007DMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 12/17/2021** Batch ID: **A84736** RunNo: **84736**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2980045** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **2112B70-007DMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 12/17/2021** Batch ID: **A84736** RunNo: **84736**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2980045** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.52	0.0020	0.5000	0	103	70	130			
Chromium	0.52	0.0060	0.5000	0	105	70	130			
Iron	0.51	0.020	0.5000	0	102	70	130			
Manganese	0.50	0.0020	0.5000	0	99.2	70	130			
Silver	0.10	0.0050	0.1000	0	100	70	130			
Zinc	0.48	0.010	0.5000	0.01196	94.2	70	130			

Sample ID: **2112B70-007DMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 12/17/2021** Batch ID: **A84736** RunNo: **84736**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2980046** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	105	70	130	2.50	20	
Cadmium	0.53	0.0020	0.5000	0	105	70	130	1.97	20	
Chromium	0.54	0.0060	0.5000	0	107	70	130	2.38	20	
Iron	0.50	0.020	0.5000	0	101	70	130	1.72	20	
Manganese	0.51	0.0020	0.5000	0	102	70	130	3.16	20	
Silver	0.10	0.0050	0.1000	0	103	70	130	2.06	20	
Zinc	0.50	0.010	0.5000	0.01196	97.0	70	130	2.87	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64661** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **64661** RunNo: **84797**
Prep Date: **12/21/2021** Analysis Date: **12/27/2021** SeqNo: **2982627** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID: **MSLLLCS-64661** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **64661** RunNo: **84797**
Prep Date: **12/21/2021** Analysis Date: **12/27/2021** SeqNo: **2982628** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00094	0.0010	0.001000	0	93.6	50	150			J
Copper	0.0010	0.0010	0.001000	0	101	50	150			
Lead	0.00051	0.00050	0.0005000	0	101	50	150			
Selenium	0.00089	0.0010	0.001000	0	89.4	50	150			J
Uranium	0.00051	0.00050	0.0005000	0	103	50	150			

Sample ID: **MSLCS-64661** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **64661** RunNo: **84797**
Prep Date: **12/21/2021** Analysis Date: **12/27/2021** SeqNo: **2982629** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	99.5	85	115			
Copper	0.025	0.0010	0.02500	0	102	85	115			
Lead	0.012	0.00050	0.01250	0	99.9	85	115			
Selenium	0.023	0.0010	0.02500	0	91.0	85	115			
Uranium	0.013	0.00050	0.01250	0	103	85	115			

Sample ID: **2112B70-001FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **OW-63** Batch ID: **64661** RunNo: **84797**
Prep Date: **12/21/2021** Analysis Date: **12/27/2021** SeqNo: **2982640** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.035	0.0010	0.02500	0.008564	105	70	130			
Copper	0.025	0.0010	0.02500	0	100	70	130			
Lead	0.012	0.00050	0.01250	.00009401	92.4	70	130			
Selenium	0.024	0.0010	0.02500	0.0003898	95.4	70	130			
Uranium	0.013	0.00050	0.01250	0	105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **2112B70-001FMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **OW-63** Batch ID: **64661** RunNo: **84797**
Prep Date: **12/21/2021** Analysis Date: **12/27/2021** SeqNo: **2982657** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.035	0.0010	0.02500	0.008564	105	70	130	0.358	20	
Copper	0.024	0.0010	0.02500	0	95.7	70	130	4.44	20	
Lead	0.011	0.00050	0.01250	.00009401	87.0	70	130	5.97	20	
Selenium	0.023	0.0010	0.02500	0.0003898	90.7	70	130	4.94	20	
Uranium	0.012	0.00050	0.01250	0	98.8	70	130	6.11	20	

Sample ID: **2112B70-002FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-25** Batch ID: **64661** RunNo: **84797**
Prep Date: **12/21/2021** Analysis Date: **12/27/2021** SeqNo: **2982659** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.031	0.0010	0.02500	0.003521	109	70	130			
Copper	0.025	0.0010	0.02500	0.001299	96.0	70	130			
Lead	0.011	0.00050	0.01250	0.0003611	87.5	70	130			
Selenium	0.026	0.0010	0.02500	0.0007655	99.6	70	130			

Sample ID: **2112B70-002FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-25** Batch ID: **64661** RunNo: **84797**
Prep Date: **12/21/2021** Analysis Date: **12/27/2021** SeqNo: **2982677** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.046	0.0025	0.01250	0.03438	95.5	70	130			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **A84953** RunNo: **84953**
Prep Date: Analysis Date: **1/4/2022** SeqNo: **2989080** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **A84953** RunNo: **84953**
Prep Date: Analysis Date: **1/4/2022** SeqNo: **2989081** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	100	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Metals**							
Client ID: **BatchQC**	Batch ID: **A84953**	RunNo: **84953**							
Prep Date:	Analysis Date: **1/4/2022**	SeqNo: **2989081**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.0011	0.0010	0.001000	0	110	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.00096	0.0010	0.001000	0	96.2	50	150			J
Uranium	0.00049	0.00050	0.0005000	0	98.9	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **A84953**	RunNo: **84953**							
Prep Date:	Analysis Date: **1/4/2022**	SeqNo: **2989083**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.5	85	115			
Copper	0.024	0.0010	0.02500	0	97.6	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.024	0.0010	0.02500	0	96.1	85	115			
Uranium	0.013	0.00050	0.01250	0	100	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**							
Client ID: **PBW**	Batch ID: **A84995**	RunNo: **84995**							
Prep Date:	Analysis Date: **1/6/2022**	SeqNo: **2990354**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.00050								

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **A84995**	RunNo: **84995**							
Prep Date:	Analysis Date: **1/6/2022**	SeqNo: **2990356**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.012	0.00050	0.01250	0	98.6	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B84856**	RunNo: **84856**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984969** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B84856**	RunNo: **84856**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984970** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Copper	0.00099	0.0010	0.001000	0	99.1	50	150			J
Lead	0.00049	0.00050	0.0005000	0	98.8	50	150			J
Selenium	0.00078	0.0010	0.001000	0	78.2	50	150			J
Uranium	0.00049	0.00050	0.0005000	0	97.3	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B84856**	RunNo: **84856**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984971** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	102	85	115			
Copper	0.025	0.0010	0.02500	0	98.2	85	115			
Lead	0.012	0.00050	0.01250	0	97.4	85	115			
Selenium	0.024	0.0010	0.02500	0	96.5	85	115			
Uranium	0.012	0.00050	0.01250	0	94.7	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B84886**	RunNo: **84886**
Prep Date:	Analysis Date: **12/30/2021**	SeqNo: **2986045** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986046** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	101	50	150			
Copper	0.00099	0.0010	0.001000	0	98.8	50	150			J
Lead	0.00049	0.00050	0.0005000	0	98.0	50	150			J
Selenium	0.00087	0.0010	0.001000	0	86.5	50	150			J
Uranium	0.00048	0.00050	0.0005000	0	95.4	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986047** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Copper	0.024	0.0010	0.02500	0	95.2	85	115			
Lead	0.012	0.00050	0.01250	0	94.9	85	115			
Selenium	0.024	0.0010	0.02500	0	96.7	85	115			
Uranium	0.012	0.00050	0.01250	0	93.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64935** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **64935** RunNo: **85065**
Prep Date: **1/10/2022** Analysis Date: **1/11/2022** SeqNo: **2992920** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-64935** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **64935** RunNo: **85065**
Prep Date: **1/10/2022** Analysis Date: **1/11/2022** SeqNo: **2992921** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00010	0.00020	0.0001500	0	66.8	50	150			J

Sample ID: **LCS-64935** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **64935** RunNo: **85065**
Prep Date: **1/10/2022** Analysis Date: **1/11/2022** SeqNo: **2992922** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	100	85	115			

Sample ID: **MB-64979** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **64979** RunNo: **85102**
Prep Date: **1/12/2022** Analysis Date: **1/12/2022** SeqNo: **2994400** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCS-64979** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **64979** RunNo: **85102**
Prep Date: **1/12/2022** Analysis Date: **1/12/2022** SeqNo: **2994402** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0054	0.00020	0.005000	0	109	85	115			

Sample ID: **LCSLL-64979** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **64979** RunNo: **85102**
Prep Date: **1/12/2022** Analysis Date: **1/12/2022** SeqNo: **2994428** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00014	0.00020	0.0001500	0	92.4	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **A84688**	RunNo: **84688**							
Prep Date:	Analysis Date: **12/20/2021**	SeqNo: **2977853**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **A84688**	RunNo: **84688**							
Prep Date:	Analysis Date: **12/20/2021**	SeqNo: **2977854**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.0	90	110			
Chloride	4.8	0.50	5.000	0	96.7	90	110			
Sulfate	9.7	0.50	10.00	0	96.7	90	110			
Nitrate+Nitrite as N	3.6	0.20	3.500	0	102	90	110			

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R84924**	RunNo: **84924**							
Prep Date:	Analysis Date: **1/3/2022**	SeqNo: **2987559**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R84924**	RunNo: **84924**							
Prep Date:	Analysis Date: **1/3/2022**	SeqNo: **2987567**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.8	90	110			

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R84955**	RunNo: **84955**							
Prep Date:	Analysis Date: **1/5/2022**	SeqNo: **2989756**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R84955**	RunNo: **84955**							
Prep Date:	Analysis Date: **1/5/2022**	SeqNo: **2989757**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.5	0.20	3.500	0	101	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

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WO#: **2112B70**

26-Jan-22

Client: Marathon

Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64767** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **64767** RunNo: **84849**
Prep Date: **12/29/2021** Analysis Date: **12/29/2021** SeqNo: **2985522** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-64767** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **64767** RunNo: **84849**
Prep Date: **12/29/2021** Analysis Date: **12/29/2021** SeqNo: **2985527** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-64767** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **64767** RunNo: **84849**
Prep Date: **12/29/2021** Analysis Date: **12/29/2021** SeqNo: **2985530** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	118	70	130			

Sample ID: **LCSD-64767** SampType: **LCSD** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02** Batch ID: **64767** RunNo: **84849**
Prep Date: **12/29/2021** Analysis Date: **12/29/2021** SeqNo: **2985534** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	115	70	130	2.73	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
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WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64698** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **64698** RunNo: **84809**
Prep Date: **12/23/2021** Analysis Date: **12/28/2021** SeqNo: **2984402** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.032		0.03750		85.4	15	142			

Sample ID: **LCS-64698** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **64698** RunNo: **84809**
Prep Date: **12/23/2021** Analysis Date: **12/28/2021** SeqNo: **2984403** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	56.9	31.7	75.4			
Surr: DNOP	0.018		0.01875		94.3	15	142			

Sample ID: **LCSD-64698** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **64698** RunNo: **84809**
Prep Date: **12/23/2021** Analysis Date: **12/28/2021** SeqNo: **2984404** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	58.3	31.7	75.4	2.53	20	
Surr: DNOP	0.019		0.01875		99.8	15	142	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R84721** RunNo: **84721**
Prep Date: Analysis Date: **12/21/2021** SeqNo: **2979226** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.4	70	130			
Toluene	19	1.0	20.00	0	95.4	70	130			
Chlorobenzene	19	1.0	20.00	0	95.6	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	91.2	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.0	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R84721** RunNo: **84721**
Prep Date: Analysis Date: **12/21/2021** SeqNo: **2979252** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R84721** RunNo: **84721**
Prep Date: Analysis Date: **12/21/2021** SeqNo: **2979252** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.0	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R84759** RunNo: **84759**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2980804** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	109	70	130			
Toluene	21	1.0	20.00	0	104	70	130			
Chlorobenzene	21	1.0	20.00	0	107	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	98.5	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	97.7	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	9.9		10.00		98.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **2112b70-004ams** SampType: **MS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **West LDU** Batch ID: **R84759** RunNo: **84759**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2980816** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	46	2.0	40.00	7.048	97.8	70	130			
Toluene	37	2.0	40.00	0.6540	92.0	70	130			
Chlorobenzene	38	2.0	40.00	0	95.1	70	130			
1,1-Dichloroethene	36	2.0	40.00	0.6720	88.4	70	130			
Trichloroethene (TCE)	35	2.0	40.00	0	87.1	70	130			
Surr: 1,2-Dichloroethane-d4	21		20.00		103	70	130			
Surr: 4-Bromofluorobenzene	20		20.00		98.9	70	130			
Surr: Dibromofluoromethane	20		20.00		100	70	130			
Surr: Toluene-d8	20		20.00		102	70	130			

Sample ID: **2112b70-004amsd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **West LDU** Batch ID: **R84759** RunNo: **84759**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2980817** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	49	2.0	40.00	7.048	104	70	130	5.23	20	
Toluene	45	2.0	40.00	0.6540	110	70	130	17.5	20	
Chlorobenzene	46	2.0	40.00	0	114	70	130	18.1	20	
1,1-Dichloroethene	39	2.0	40.00	0.6720	95.9	70	130	8.02	20	
Trichloroethene (TCE)	39	2.0	40.00	0	98.7	70	130	12.5	20	
Surr: 1,2-Dichloroethane-d4	20		20.00		100	70	130	0	0	
Surr: 4-Bromofluorobenzene	19		20.00		95.4	70	130	0	0	
Surr: Dibromofluoromethane	19		20.00		96.7	70	130	0	0	
Surr: Toluene-d8	21		20.00		103	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R84759** RunNo: **84759**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2980822** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R84759**	RunNo: **84759**
Prep Date:	Analysis Date: **12/22/2021**	SeqNo: **2980822** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.8	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R84851**	RunNo: **84851**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984836** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	108	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	94.0	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.1	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R84851**	RunNo: **84851**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984865** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.4	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64659** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **64659** RunNo: **84935**
Prep Date: **12/21/2021** Analysis Date: **1/5/2022** SeqNo: **2989266** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Benzoic acid	ND	20								
Benzyl alcohol	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	10								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
Di-n-octyl phthalate	ND	20								
Dibenzofuran	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Pentachlorophenol	ND	20								
Phenol	ND	5.0								
Pyridine	ND	40								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	120		200.0		59.4	15	87			
Surr: Phenol-d5	89		200.0		44.7	15	67.5			
Surr: 2,4,6-Tribromophenol	170		200.0		85.4	15	122			
Surr: Nitrobenzene-d5	67		100.0		67.2	15	103			
Surr: 2-Fluorobiphenyl	69		100.0		68.6	15	103			
Surr: 4-Terphenyl-d14	110		100.0		113	45	137			

Sample ID: **LCS-64659** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **64659** RunNo: **84935**
Prep Date: **12/21/2021** Analysis Date: **1/5/2022** SeqNo: **2989267** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	77	5.0	100.0	0	77.5	15	87.6			
Pentachlorophenol	170	20	200.0	0	82.6	21	111			
Phenol	110	5.0	200.0	0	55.1	16.8	70.5			
Surr: 2-Fluorophenol	140		200.0		69.3	15	87			
Surr: Phenol-d5	110		200.0		53.3	15	67.5			
Surr: 2,4,6-Tribromophenol	180		200.0		88.2	15	122			
Surr: Nitrobenzene-d5	81		100.0		80.5	15	103			
Surr: 2-Fluorobiphenyl	79		100.0		79.2	15	103			
Surr: 4-Terphenyl-d14	120		100.0		123	45	137			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCSD-64659** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **64659** RunNo: **84935**
Prep Date: **12/21/2021** Analysis Date: **1/5/2022** SeqNo: **2989268** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	71	5.0	100.0	0	70.9	15	87.6	8.91	30.4	
Pentachlorophenol	160	20	200.0	0	77.9	21	111	5.85	71.6	
Phenol	99	5.0	200.0	0	49.6	16.8	70.5	10.6	37.2	
Surr: 2-Fluorophenol	130		200.0		63.9	15	87	0	0	
Surr: Phenol-d5	99		200.0		49.4	15	67.5	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		81.1	15	122	0	0	
Surr: Nitrobenzene-d5	82		100.0		82.1	15	103	0	0	
Surr: 2-Fluorobiphenyl	81		100.0		81.1	15	103	0	0	
Surr: 4-Terphenyl-d14	110		100.0		112	45	137	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb-64693** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64693** RunNo: **84979**
Prep Date: **12/22/2021** Analysis Date: **1/5/2022** SeqNo: **2989841** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Surr: Nitrobenzene-d5	1.9		4.000		48.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	3.3		8.000		41.5	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.7		4.000		43.5	15	84.5			
Surr: 4-Terphenyl-d14	4.0		4.000		101	73.1	152			

Sample ID: **lcs-64693** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64693** RunNo: **84979**
Prep Date: **12/22/2021** Analysis Date: **1/5/2022** SeqNo: **2989842** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.72	0.10	2.000	0	36.0	15	79.8			
Naphthalene	0.74	0.10	2.000	0	37.0	26.5	90.9			
1-Methylnaphthalene	0.74	0.10	2.000	0	37.0	27.9	88.2			
2-Methylnaphthalene	0.70	0.10	2.000	0	35.0	29.2	87.5			
Acenaphthene	1.0	0.10	2.000	0	51.0	25.6	93.9			
Fluorene	1.3	0.10	2.000	0	63.0	27.4	95.1			
Phenanthrene	1.6	0.10	2.000	0	78.0	25.1	104			
Anthracene	1.5	0.10	2.000	0	75.0	30.1	100			
Fluoranthene	1.9	0.20	2.000	0	95.0	41.6	126			
Pyrene	1.7	0.20	2.000	0	84.0	34.5	112			
Benz(a)anthracene	2.0	0.10	2.000	0	101	43.9	132			
Chrysene	1.8	0.10	2.000	0	91.0	39.8	118			
Surr: Nitrobenzene-d5	3.4		5.000		68.4	21.9	89.8			
Surr: 2,4,6-Tribromophenol	6.4		10.00		64.2	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.9		5.000		57.6	15	84.5			
Surr: 4-Terphenyl-d14	5.4		5.000		109	73.1	152			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb-64618** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64618** RunNo: **85004**
Prep Date: **12/20/2021** Analysis Date: **1/7/2022** SeqNo: **2990676** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	2.8		4.000		69.0	21.9	89.8			
Surr: 2,4,6-Tribromophenol	5.0		8.000		62.3	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.3		4.000		56.5	15	84.5			
Surr: 4-Terphenyl-d14	4.7		4.000		118	73.1	152			

Sample ID: **lcs-64618** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64618** RunNo: **85004**
Prep Date: **12/20/2021** Analysis Date: **1/7/2022** SeqNo: **2990677** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.8		5.000		75.6	21.9	89.8			
Surr: 2,4,6-Tribromophenol	7.0		10.00		69.8	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.9		5.000		58.8	15	84.5			
Surr: 4-Terphenyl-d14	5.7		5.000		114	73.1	152			

Sample ID: **lcsd-64618** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **64618** RunNo: **85004**
Prep Date: **12/20/2021** Analysis Date: **1/7/2022** SeqNo: **2990678** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	4.2		5.000		83.2	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	8.2		10.00		81.6	23.4	71.6	0	0	S
Surr: 2-Fluorobiphenyl	3.2		5.000		64.8	15	84.5	0	0	
Surr: 4-Terphenyl-d14	6.9		5.000		139	73.1	152	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112B70**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **2.5ng gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G84721** RunNo: **84721**
Prep Date: Analysis Date: **12/21/2021** SeqNo: **2979255** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	96.7	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.9	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G84721** RunNo: **84721**
Prep Date: Analysis Date: **12/21/2021** SeqNo: **2979275** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			

Sample ID: **2.5ng gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G84851** RunNo: **84851**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984868** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G84851** RunNo: **84851**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984889** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2112B70** RcptNo: **1**

Received By: **Isaiah Ortiz** **12/18/2021 10:00:00 AM** I-OK

Completed By: **Desiree Dominguez** **12/20/2021 8:46:42 AM** DD

Reviewed By: MC 12/20/21

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 17 (<2 or >12 unless noted)

Adjusted? NO

Checked by: KPG 12/20/2021

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks: Did not receive sample 008 full set. from sample 001 didn't receive VOA's for 504.1 analysis -DAD 12/20/21

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.8	Good	Not Present			
2	5.8	Good	Not Present			
3	4.6	Good	Not Present			
4	3.3	Good	Not Present			
5	5.8	Good	Not Present			

Released to Imaging: 11/23/2022 10:22:25 AM

Received by OCD: 3/25/2022 3:35:30 PM

Chain-of-Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamesto' NM,87301

Phone #: 808-640-1823

Email or Fax#:

QA/QC Package:
Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
NELAC ☐ Other

EDD (Type)

X Standard Rush

Project Name:
2021 GW Sampling 4th Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Brian McLoughlin

Sampler:

On Ice: ☑ Yes ☐ No

# of Coolers: 5

Cooler Temp(including CF): see below

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2112B70	See Analyte List	VOC	TPH GRO	TPH DRO/MRO	SVOC	1,4 Dioxane	WQCC METALS	cations/anions	nitrate/nitrate	8011 EDB	~~EDB~~ BTEX + MTBE	Cyanide	TDS/TSS	General Chemistry	PFAS
12/17	12:10	GW	OW-63			-001		X	X	X	X		X	X							X
12/17	12:40	GW	MKTF-25			-002	X	X	X	X			X	X		X					
12/17	13:10	GW	MKTF-40			-003	X	X	X	X			X	X		X					
12/17	13:30	GW	WEST LOU			-004			X	X			X				X				
12/17	13:45	GW	EAST LOU			-005			X	X			X				X				
12/17	—	GW	DUP 12/17/2021			-006			X	X			X				X				
12/17	13:30	water	EB 12/17/2021			-007			X	X			X				X				
12/17	13:30	water	FB 12/17/2021			-008		X													
12/17	12:10	water	FB PFAS			-009															X

Date	Time:	Relinquished by:	Received by:	Via:	Date	Time
12/18	10:00			courier	12/18/21	1000
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

3.8°C ±0
5.8°C ±0
4.6°C ±0
3.3°C ±0
5.8°C ±0

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

January 18, 2022

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL:
FAX

RE: 2021 GW Sampling 4th Quarter OrderNo.: 2112C34

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 9 sample(s) on 12/21/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
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Case Narrative

WO#: **2112C34**
Date: **1/18/2022**

CLIENT: Marathon
Project: 2021 GW Sampling 4th Quarter

Analytical Notes Regarding EPA Method 8270:
Pyridine is reported with an "E" flag. The "E" flag is used to represent an estimated value. Pyridine was not detected in the sample, but the calibration curve for this compound did not meet the method requirements.

"S" flags denote that the sample surrogate or spike result is outside of the acceptable limits due to sample dilution or matrix interferences.

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 8:35:00 AM
Lab ID: 2112C34-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
Toluene	ND	0.20	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
Naphthalene	ND	0.50	2.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
Acetone	3.5	2.5	10	J	µg/L	1	12/28/2021 5:59:37 PM	R84831
Bromomethane	ND	0.85	3.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
2-Butanone	ND	2.0	10		µg/L	1	12/28/2021 5:59:37 PM	R84831
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
Chloroethane	ND	0.38	2.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
Chloroform	ND	0.13	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
Chloromethane	ND	0.41	3.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
2-Hexanone	ND	1.8	10		µg/L	1	12/28/2021 5:59:37 PM	R84831
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/28/2021 5:59:37 PM	R84831
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
Styrene	ND	0.14	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/28/2021 5:59:37 PM	R84831
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/28/2021 5:59:37 PM	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 8:35:00 AM
Lab ID: 2112C34-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	12/28/2021 5:59:37 PM	R84831
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	12/28/2021 5:59:37 PM	R84831
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	12/28/2021 5:59:37 PM	R84831
Surr: Toluene-d8	103	0	70-130		%Rec	1	12/28/2021 5:59:37 PM	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/28/2021 5:59:37 PM	G84831
Surr: 4-Bromofluorobenzene	113	0	70-130		%Rec	1	12/28/2021 5:59:37 PM	G84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 8:35:00 AM
Lab ID: 2112C34-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.017	0.016	0.064	J	mg/L	1	12/28/2021 10:46:00 P	64698
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 10:46:00 P	64698
Surr: DNOP	97.7	0	15-142		%Rec	1	12/28/2021 10:46:00 P	64698

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 8:35:00 AM
Lab ID: 2112C34-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/7/2022 12:29:35 AM	64740
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 12:29:35 AM	64740
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/7/2022 12:29:35 AM	64740
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 12:29:35 AM	64740
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/7/2022 12:29:35 AM	64740
Carbazole	ND	0.56	5.0		µg/L	1	1/7/2022 12:29:35 AM	64740
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 12:29:35 AM	64740
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/7/2022 12:29:35 AM	64740
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/7/2022 12:29:35 AM	64740
Diethyl phthalate	ND	3.9	10		µg/L	1	1/7/2022 12:29:35 AM	64740
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 12:29:35 AM	64740
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/7/2022 12:29:35 AM	64740
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/7/2022 12:29:35 AM	64740
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/7/2022 12:29:35 AM	64740
Phenol	ND	0.33	5.0		µg/L	1	1/7/2022 12:29:35 AM	64740
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/7/2022 12:29:35 AM	64740
Surr: 2-Fluorophenol	56.7	0	15-87		%Rec	1	1/7/2022 12:29:35 AM	64740
Surr: Phenol-d5	41.8	0	15-67.5		%Rec	1	1/7/2022 12:29:35 AM	64740
Surr: 2,4,6-Tribromophenol	65.9	0	15-122		%Rec	1	1/7/2022 12:29:35 AM	64740
Surr: Nitrobenzene-d5	68.5	0	15-103		%Rec	1	1/7/2022 12:29:35 AM	64740
Surr: 2-Fluorobiphenyl	63.1	0	15-103		%Rec	1	1/7/2022 12:29:35 AM	64740
Surr: 4-Terphenyl-d14	101	0	45-137		%Rec	1	1/7/2022 12:29:35 AM	64740
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	1/6/2022 3:55:00 AM	64693
Naphthalene	ND	0.034	0.10		µg/L	1	1/6/2022 3:55:00 AM	64693
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	1/6/2022 3:55:00 AM	64693
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	1/6/2022 3:55:00 AM	64693
Acenaphthene	ND	0.031	0.10		µg/L	1	1/6/2022 3:55:00 AM	64693
Fluorene	ND	0.031	0.10		µg/L	1	1/6/2022 3:55:00 AM	64693
Phenanthrene	ND	0.057	0.10		µg/L	1	1/6/2022 3:55:00 AM	64693
Anthracene	ND	0.034	0.10		µg/L	1	1/6/2022 3:55:00 AM	64693
Pyrene	ND	0.16	0.20		µg/L	1	1/6/2022 3:55:00 AM	64693
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	1/6/2022 3:55:00 AM	64693
Chrysene	ND	0.024	0.10		µg/L	1	1/6/2022 3:55:00 AM	64693
Surr: Nitrobenzene-d5	56.5	0	21.9-89.8		%Rec	1	1/6/2022 3:55:00 AM	64693
Surr: 2-Fluorobiphenyl	50.5	0	15-84.5		%Rec	1	1/6/2022 3:55:00 AM	64693
Surr: 4-Terphenyl-d14	102	0	73.1-152		%Rec	1	1/6/2022 3:55:00 AM	64693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 8:35:00 AM
Lab ID: 2112C34-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.040	0.10		mg/L	1	12/22/2021 10:09:44 A	R84761
Chloride	ND	0.25	0.50		mg/L	1	12/22/2021 10:09:44 A	R84761
Nitrogen, Nitrite (As N)	ND	0.0053	0.10		mg/L	1	12/22/2021 10:09:44 A	R84761
Nitrogen, Nitrate (As N)	0.038	0.010	0.10	J	mg/L	1	12/22/2021 10:09:44 A	R84761
Sulfate	ND	0.25	0.50		mg/L	1	12/22/2021 10:09:44 A	R84761

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 8:35:00 AM
Lab ID: 2112C34-001F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	12/29/2021 10:32:25 A	64738
Cadmium	ND	0.0015	0.0020		mg/L	1	12/29/2021 10:32:25 A	64738
Chromium	ND	0.0021	0.0060		mg/L	1	12/29/2021 10:32:25 A	64738
Iron	ND	0.013	0.050		mg/L	1	12/29/2021 10:32:25 A	64738
Manganese	ND	0.00081	0.0020		mg/L	1	12/29/2021 10:32:25 A	64738
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 10:32:25 A	64738
Zinc	ND	0.0064	0.010		mg/L	1	12/29/2021 10:32:25 A	64738
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	ND	0.00013	0.0010		mg/L	1	12/28/2021 3:29:11 PM	64738
Copper	ND	0.00040	0.0010		mg/L	1	12/28/2021 3:29:11 PM	64738
Lead	ND	0.000061	0.00050		mg/L	1	12/28/2021 3:29:11 PM	64738
Selenium	ND	0.00037	0.0010		mg/L	1	12/28/2021 3:29:11 PM	64738
Uranium	ND	0.000069	0.00050		mg/L	1	12/28/2021 3:29:11 PM	64738
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 1:48:25 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 8:35:00 AM
Lab ID: 2112C34-001G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	12/22/2021 11:21:17 A	A84736
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2021 11:21:17 A	A84736
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2021 11:21:17 A	A84736
Iron	ND	0.010	0.020		mg/L	1	12/22/2021 11:21:17 A	A84736
Manganese	ND	0.00058	0.0020		mg/L	1	12/22/2021 11:21:17 A	A84736
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 11:21:17 A	A84736
Zinc	0.0043	0.0032	0.010	J	mg/L	1	12/22/2021 11:21:17 A	A84736
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	ND	0.00012	0.0010		mg/L	1	12/30/2021 2:10:39 PM	A84886
Copper	ND	0.00037	0.0010		mg/L	1	12/30/2021 2:10:39 PM	A84886
Lead	ND	0.000057	0.00050		mg/L	1	12/30/2021 2:10:39 PM	A84886
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 2:10:39 PM	A84886
Uranium	ND	0.000065	0.00050		mg/L	1	12/30/2021 2:10:39 PM	A84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 1:50:43 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-17R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:00:00 AM
Lab ID: 2112C34-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	1500	23	100		µg/L	100	12/28/2021 7:25:45 PM	R84831
Toluene	5800	20	100		µg/L	100	12/28/2021 7:25:45 PM	R84831
Ethylbenzene	460	2.1	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
Methyl tert-butyl ether (MTBE)	4300	39	100		µg/L	100	12/28/2021 7:25:45 PM	R84831
1,2,4-Trimethylbenzene	370	1.2	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
1,3,5-Trimethylbenzene	95	1.8	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
1,2-Dichloroethane (EDC)	ND	2.5	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
Naphthalene	72	5.0	20		µg/L	10	12/28/2021 7:54:31 PM	R84831
1-Methylnaphthalene	18	8.4	40	J	µg/L	10	12/28/2021 7:54:31 PM	R84831
2-Methylnaphthalene	22	6.9	40	J	µg/L	10	12/28/2021 7:54:31 PM	R84831
Acetone	ND	25	100		µg/L	10	12/28/2021 7:54:31 PM	R84831
Bromomethane	ND	8.5	30		µg/L	10	12/28/2021 7:54:31 PM	R84831
2-Butanone	ND	20	100		µg/L	10	12/28/2021 7:54:31 PM	R84831
Chlorobenzene	ND	1.6	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
Chloroethane	ND	3.8	20		µg/L	10	12/28/2021 7:54:31 PM	R84831
Chloroform	4.9	1.3	10	J	µg/L	10	12/28/2021 7:54:31 PM	R84831
Chloromethane	ND	4.1	30		µg/L	10	12/28/2021 7:54:31 PM	R84831
cis-1,2-DCE	ND	3.9	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
1,1-Dichloroethane	5.5	2.7	10	J	µg/L	10	12/28/2021 7:54:31 PM	R84831
1,1-Dichloroethene	ND	2.0	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
1,2-Dichloropropane	ND	2.0	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
2-Hexanone	ND	18	100		µg/L	10	12/28/2021 7:54:31 PM	R84831
Isopropylbenzene	30	1.8	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
4-Isopropyltoluene	3.6	2.0	10	J	µg/L	10	12/28/2021 7:54:31 PM	R84831
4-Methyl-2-pentanone	ND	8.8	100		µg/L	10	12/28/2021 7:54:31 PM	R84831
Methylene Chloride	ND	5.0	30		µg/L	10	12/28/2021 7:54:31 PM	R84831
n-Butylbenzene	6.9	2.5	30	J	µg/L	10	12/28/2021 7:54:31 PM	R84831
n-Propylbenzene	69	1.8	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
sec-Butylbenzene	4.6	1.4	10	J	µg/L	10	12/28/2021 7:54:31 PM	R84831
Styrene	1.4	1.4	10	J	µg/L	10	12/28/2021 7:54:31 PM	R84831
tert-Butylbenzene	ND	2.4	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
1,1,2-Trichloroethane	3.0	2.0	10	J	µg/L	10	12/28/2021 7:54:31 PM	R84831
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
Vinyl chloride	ND	3.2	10		µg/L	10	12/28/2021 7:54:31 PM	R84831
Xylenes, Total	2300	3.7	15		µg/L	10	12/28/2021 7:54:31 PM	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-17R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:00:00 AM
Lab ID: 2112C34-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Surr: 1,2-Dichloroethane-d4	92.3	0	70-130		%Rec	10	12/28/2021 7:54:31 PM	R84831
Surr: 4-Bromofluorobenzene	84.2	0	70-130		%Rec	10	12/28/2021 7:54:31 PM	R84831
Surr: Dibromofluoromethane	91.7	0	70-130		%Rec	10	12/28/2021 7:54:31 PM	R84831
Surr: Toluene-d8	103	0	70-130		%Rec	10	12/28/2021 7:54:31 PM	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	28	0.12	0.50		mg/L	10	12/28/2021 7:54:31 PM	G84831
Surr: 4-Bromofluorobenzene	92.2	0	70-130		%Rec	10	12/28/2021 7:54:31 PM	G84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-17R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:00:00 AM
Lab ID: 2112C34-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.8	0.016	0.064		mg/L	1	12/28/2021 11:09:34 P	64698
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 11:09:34 P	64698
Surr: DNOP	99.2	0	15-142		%Rec	1	12/28/2021 11:09:34 P	64698

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-17R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:00:00 AM
Lab ID: 2112C34-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/7/2022 1:09:55 AM	64740
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 1:09:55 AM	64740
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/7/2022 1:09:55 AM	64740
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 1:09:55 AM	64740
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/7/2022 1:09:55 AM	64740
Carbazole	ND	0.56	5.0		µg/L	1	1/7/2022 1:09:55 AM	64740
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 1:09:55 AM	64740
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/7/2022 1:09:55 AM	64740
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/7/2022 1:09:55 AM	64740
Diethyl phthalate	ND	3.9	10		µg/L	1	1/7/2022 1:09:55 AM	64740
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 1:09:55 AM	64740
2,4-Dimethylphenol	3.9	0.97	5.0	J	µg/L	1	1/7/2022 1:09:55 AM	64740
2-Methylphenol	22	0.51	5.0		µg/L	1	1/7/2022 1:09:55 AM	64740
3+4-Methylphenol	10	0.45	5.0		µg/L	1	1/7/2022 1:09:55 AM	64740
Phenol	8.1	0.33	5.0		µg/L	1	1/7/2022 1:09:55 AM	64740
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/7/2022 1:09:55 AM	64740
Surr: 2-Fluorophenol	0	0	15-87	S	%Rec	1	1/7/2022 1:09:55 AM	64740
Surr: Phenol-d5	48.5	0	15-67.5		%Rec	1	1/7/2022 1:09:55 AM	64740
Surr: 2,4,6-Tribromophenol	80.2	0	15-122		%Rec	1	1/7/2022 1:09:55 AM	64740
Surr: Nitrobenzene-d5	77.2	0	15-103		%Rec	1	1/7/2022 1:09:55 AM	64740
Surr: 2-Fluorobiphenyl	77.9	0	15-103		%Rec	1	1/7/2022 1:09:55 AM	64740
Surr: 4-Terphenyl-d14	110	0	45-137		%Rec	1	1/7/2022 1:09:55 AM	64740
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	3.9	0.048	1.0		µg/L	1	1/6/2022 4:39:00 AM	64693
Naphthalene	45	0.34	1.0		µg/L	10	1/6/2022 1:31:00 PM	64693
1-Methylnaphthalene	17	0.024	0.10		µg/L	1	1/6/2022 4:39:00 AM	64693
2-Methylnaphthalene	18	0.34	1.0		µg/L	10	1/6/2022 1:31:00 PM	64693
Acenaphthene	1.0	0.031	0.10		µg/L	1	1/6/2022 4:39:00 AM	64693
Fluorene	1.9	0.031	0.10		µg/L	1	1/6/2022 4:39:00 AM	64693
Phenanthrene	1.6	0.057	0.10		µg/L	1	1/6/2022 4:39:00 AM	64693
Anthracene	0.42	0.034	0.10		µg/L	1	1/6/2022 4:39:00 AM	64693
Pyrene	0.28	0.16	0.20		µg/L	1	1/6/2022 4:39:00 AM	64693
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	1/6/2022 4:39:00 AM	64693
Chrysene	ND	0.024	0.10		µg/L	1	1/6/2022 4:39:00 AM	64693
Surr: Nitrobenzene-d5	7.00	0	21.9-89.8	S	%Rec	1	1/6/2022 4:39:00 AM	64693
Surr: 2-Fluorobiphenyl	60.0	0	15-84.5		%Rec	1	1/6/2022 4:39:00 AM	64693
Surr: 4-Terphenyl-d14	104	0	73.1-152		%Rec	1	1/6/2022 4:39:00 AM	64693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-17R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:00:00 AM
Lab ID: 2112C34-002E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.72	0.20	0.50		mg/L	5	12/22/2021 11:01:10 A	R84761
Chloride	180	5.0	10		mg/L	20	12/22/2021 11:14:03 A	R84761
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	12/22/2021 11:01:10 A	R84761
Nitrogen, Nitrate (As N)	ND	0.050	0.50		mg/L	5	12/22/2021 11:01:10 A	R84761
Sulfate	4.9	1.2	2.5		mg/L	5	12/22/2021 11:01:10 A	R84761

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-17R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:00:00 AM
Lab ID: 2112C34-002F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.34	0.0016	0.0030		mg/L	1	12/29/2021 10:39:01 A	64738
Cadmium	ND	0.0015	0.0020		mg/L	1	12/29/2021 10:39:01 A	64738
Chromium	ND	0.0021	0.0060		mg/L	1	12/29/2021 10:39:01 A	64738
Iron	0.88	0.013	0.050	*	mg/L	1	12/29/2021 10:39:01 A	64738
Manganese	3.4	0.0041	0.010	*	mg/L	5	12/29/2021 10:40:17 A	64738
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 10:39:01 A	64738
Zinc	ND	0.0064	0.010		mg/L	1	12/29/2021 10:39:01 A	64738
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0053	0.00013	0.0010		mg/L	1	12/28/2021 3:31:37 PM	64738
Copper	0.0013	0.00040	0.0010		mg/L	1	12/28/2021 3:31:37 PM	64738
Lead	0.00050	0.000061	0.00050	J	mg/L	1	12/28/2021 3:31:37 PM	64738
Selenium	ND	0.00037	0.0010		mg/L	1	12/28/2021 3:31:37 PM	64738
Uranium	0.0051	0.000069	0.00050		mg/L	1	12/28/2021 3:31:37 PM	64738
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 1:53:00 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-17R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:00:00 AM
Lab ID: 2112C34-002G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.34	0.0011	0.0020		mg/L	1	12/22/2021 11:27:52 A	A84736
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2021 11:27:52 A	A84736
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2021 11:27:52 A	A84736
Iron	0.16	0.010	0.020		mg/L	1	12/22/2021 11:27:52 A	A84736
Manganese	3.4	0.0029	0.010	*	mg/L	5	12/22/2021 11:29:35 A	A84736
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 11:27:52 A	A84736
Zinc	0.0078	0.0032	0.010	J	mg/L	1	12/22/2021 11:27:52 A	A84736
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0047	0.00012	0.0010		mg/L	1	12/30/2021 2:13:20 PM	A84886
Copper	0.00044	0.00037	0.0010	J	mg/L	1	12/30/2021 2:13:20 PM	A84886
Lead	0.00012	0.000057	0.00050	J	mg/L	1	12/30/2021 2:13:20 PM	A84886
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 2:13:20 PM	A84886
Uranium	0.0047	0.000065	0.00050		mg/L	1	12/30/2021 2:13:20 PM	A84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 2:02:09 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:45:00 AM
Lab ID: 2112C34-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	1900	23	100		µg/L	100	12/28/2021 9:49:15 PM	R84831
Toluene	800	2.0	10		µg/L	10	12/28/2021 10:17:59 P	R84831
Ethylbenzene	63	2.1	10		µg/L	10	12/28/2021 10:17:59 P	R84831
Methyl tert-butyl ether (MTBE)	130	3.9	10		µg/L	10	12/28/2021 10:17:59 P	R84831
1,2,4-Trimethylbenzene	41	1.2	10		µg/L	10	12/28/2021 10:17:59 P	R84831
1,3,5-Trimethylbenzene	11	1.8	10		µg/L	10	12/28/2021 10:17:59 P	R84831
1,2-Dichloroethane (EDC)	ND	2.5	10		µg/L	10	12/28/2021 10:17:59 P	R84831
Naphthalene	130	5.0	20		µg/L	10	12/28/2021 10:17:59 P	R84831
1-Methylnaphthalene	190	8.4	40		µg/L	10	12/28/2021 10:17:59 P	R84831
2-Methylnaphthalene	240	6.9	40		µg/L	10	12/28/2021 10:17:59 P	R84831
Acetone	ND	25	100		µg/L	10	12/28/2021 10:17:59 P	R84831
Bromomethane	ND	8.5	30		µg/L	10	12/28/2021 10:17:59 P	R84831
2-Butanone	ND	20	100		µg/L	10	12/28/2021 10:17:59 P	R84831
Chlorobenzene	ND	1.6	10		µg/L	10	12/28/2021 10:17:59 P	R84831
Chloroethane	ND	3.8	20		µg/L	10	12/28/2021 10:17:59 P	R84831
Chloroform	ND	1.3	10		µg/L	10	12/28/2021 10:17:59 P	R84831
Chloromethane	ND	4.1	30		µg/L	10	12/28/2021 10:17:59 P	R84831
cis-1,2-DCE	5.5	3.9	10	J	µg/L	10	12/28/2021 10:17:59 P	R84831
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	12/28/2021 10:17:59 P	R84831
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	12/28/2021 10:17:59 P	R84831
1,1-Dichloroethane	ND	2.7	10		µg/L	10	12/28/2021 10:17:59 P	R84831
1,1-Dichloroethene	ND	2.0	10		µg/L	10	12/28/2021 10:17:59 P	R84831
1,2-Dichloropropane	ND	2.0	10		µg/L	10	12/28/2021 10:17:59 P	R84831
2-Hexanone	ND	18	100		µg/L	10	12/28/2021 10:17:59 P	R84831
Isopropylbenzene	5.9	1.8	10	J	µg/L	10	12/28/2021 10:17:59 P	R84831
4-Isopropyltoluene	3.3	2.0	10	J	µg/L	10	12/28/2021 10:17:59 P	R84831
4-Methyl-2-pentanone	ND	8.8	100		µg/L	10	12/28/2021 10:17:59 P	R84831
Methylene Chloride	ND	5.0	30		µg/L	10	12/28/2021 10:17:59 P	R84831
n-Butylbenzene	4.1	2.5	30	J	µg/L	10	12/28/2021 10:17:59 P	R84831
n-Propylbenzene	10	1.8	10		µg/L	10	12/28/2021 10:17:59 P	R84831
sec-Butylbenzene	3.2	1.4	10	J	µg/L	10	12/28/2021 10:17:59 P	R84831
Styrene	ND	1.4	10		µg/L	10	12/28/2021 10:17:59 P	R84831
tert-Butylbenzene	ND	2.4	10		µg/L	10	12/28/2021 10:17:59 P	R84831
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	12/28/2021 10:17:59 P	R84831
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	12/28/2021 10:17:59 P	R84831
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	12/28/2021 10:17:59 P	R84831
1,1,2-Trichloroethane	2.6	2.0	10	J	µg/L	10	12/28/2021 10:17:59 P	R84831
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	12/28/2021 10:17:59 P	R84831
Vinyl chloride	ND	3.2	10		µg/L	10	12/28/2021 10:17:59 P	R84831
Xylenes, Total	310	3.7	15		µg/L	10	12/28/2021 10:17:59 P	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:45:00 AM
Lab ID: 2112C34-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Surr: 1,2-Dichloroethane-d4	97.6	0	70-130		%Rec	10	12/28/2021 10:17:59 P	R84831
Surr: 4-Bromofluorobenzene	95.8	0	70-130		%Rec	10	12/28/2021 10:17:59 P	R84831
Surr: Dibromofluoromethane	93.9	0	70-130		%Rec	10	12/28/2021 10:17:59 P	R84831
Surr: Toluene-d8	102	0	70-130		%Rec	10	12/28/2021 10:17:59 P	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	6.7	0.12	0.50		mg/L	10	12/28/2021 10:17:59 P	G84831
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	10	12/28/2021 10:17:59 P	G84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:45:00 AM
Lab ID: 2112C34-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	4.4	0.16	0.64		mg/L	10	12/30/2021 2:24:04 PM	64698
Motor Oil Range Organics (MRO)	ND	0.52	0.80	D	mg/L	10	12/30/2021 2:24:04 PM	64698
Surr: DNOP	0	0	15-142	S	%Rec	10	12/30/2021 2:24:04 PM	64698

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:45:00 AM
Lab ID: 2112C34-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/7/2022 1:51:17 AM	64740
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 1:51:17 AM	64740
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/7/2022 1:51:17 AM	64740
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 1:51:17 AM	64740
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/7/2022 1:51:17 AM	64740
Carbazole	ND	0.56	5.0		µg/L	1	1/7/2022 1:51:17 AM	64740
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 1:51:17 AM	64740
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/7/2022 1:51:17 AM	64740
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/7/2022 1:51:17 AM	64740
Diethyl phthalate	ND	3.9	10		µg/L	1	1/7/2022 1:51:17 AM	64740
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 1:51:17 AM	64740
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/7/2022 1:51:17 AM	64740
2-Methylphenol	8.4	0.51	5.0		µg/L	1	1/7/2022 1:51:17 AM	64740
3+4-Methylphenol	2.2	0.45	5.0	J	µg/L	1	1/7/2022 1:51:17 AM	64740
Phenol	17	0.33	5.0		µg/L	1	1/7/2022 1:51:17 AM	64740
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/7/2022 1:51:17 AM	64740
Surr: 2-Fluorophenol	49.2	0	15-87		%Rec	1	1/7/2022 1:51:17 AM	64740
Surr: Phenol-d5	39.4	0	15-67.5		%Rec	1	1/7/2022 1:51:17 AM	64740
Surr: 2,4,6-Tribromophenol	67.7	0	15-122		%Rec	1	1/7/2022 1:51:17 AM	64740
Surr: Nitrobenzene-d5	64.5	0	15-103		%Rec	1	1/7/2022 1:51:17 AM	64740
Surr: 2-Fluorobiphenyl	61.2	0	15-103		%Rec	1	1/7/2022 1:51:17 AM	64740
Surr: 4-Terphenyl-d14	96.8	0	45-137		%Rec	1	1/7/2022 1:51:17 AM	64740
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	5.5	0.048	1.0		µg/L	1	1/6/2022 5:24:00 AM	64693
Naphthalene	72	0.67	2.0		µg/L	20	1/6/2022 2:18:00 PM	64693
1-Methylnaphthalene	110	0.48	2.0		µg/L	20	1/6/2022 2:18:00 PM	64693
2-Methylnaphthalene	150	0.67	2.0		µg/L	20	1/6/2022 2:18:00 PM	64693
Acenaphthene	6.7	0.031	0.10		µg/L	1	1/6/2022 5:24:00 AM	64693
Fluorene	9.9	0.031	0.10		µg/L	1	1/6/2022 5:24:00 AM	64693
Phenanthrene	11	0.057	0.10		µg/L	1	1/6/2022 5:24:00 AM	64693
Anthracene	0.76	0.034	0.10		µg/L	1	1/6/2022 5:24:00 AM	64693
Pyrene	0.34	0.16	0.20		µg/L	1	1/6/2022 5:24:00 AM	64693
Benz(a)anthracene	0.40	0.036	0.10		µg/L	1	1/6/2022 5:24:00 AM	64693
Chrysene	0.20	0.024	0.10		µg/L	1	1/6/2022 5:24:00 AM	64693
Surr: Nitrobenzene-d5	71.0	0	21.9-89.8		%Rec	1	1/6/2022 5:24:00 AM	64693
Surr: 2-Fluorobiphenyl	49.0	0	15-84.5		%Rec	1	1/6/2022 5:24:00 AM	64693
Surr: 4-Terphenyl-d14	86.5	0	73.1-152		%Rec	1	1/6/2022 5:24:00 AM	64693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:45:00 AM
Lab ID: 2112C34-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.53	0.20	0.50		mg/L	5	12/22/2021 12:05:30 P	R84761
Chloride	310	5.0	10	*	mg/L	20	12/22/2021 12:18:22 P	R84761
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	12/22/2021 12:05:30 P	R84761
Nitrogen, Nitrate (As N)	0.12	0.050	0.50	J	mg/L	5	12/22/2021 12:05:30 P	R84761
Sulfate	ND	1.2	2.5		mg/L	5	12/22/2021 12:05:30 P	R84761

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:45:00 AM
Lab ID: 2112C34-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	1.5	0.0082	0.015		mg/L	5	12/29/2021 10:43:05 A	64738
Cadmium	ND	0.0015	0.0020		mg/L	1	12/29/2021 10:41:46 A	64738
Chromium	ND	0.0021	0.0060		mg/L	1	12/29/2021 10:41:46 A	64738
Iron	2.9	0.064	0.25	*	mg/L	5	12/29/2021 10:43:05 A	64738
Manganese	2.4	0.0041	0.010	*	mg/L	5	12/29/2021 10:43:05 A	64738
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 10:41:46 A	64738
Zinc	ND	0.0064	0.010		mg/L	1	12/29/2021 10:41:46 A	64738
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0071	0.00013	0.0010		mg/L	1	12/28/2021 3:34:04 PM	64738
Copper	0.0011	0.00040	0.0010		mg/L	1	12/28/2021 3:34:04 PM	64738
Lead	0.00088	0.000061	0.00050		mg/L	1	12/28/2021 3:34:04 PM	64738
Selenium	ND	0.00037	0.0010		mg/L	1	12/28/2021 3:34:04 PM	64738
Uranium	0.0038	0.000069	0.00050		mg/L	1	12/28/2021 3:34:04 PM	64738
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:03:04 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 9:45:00 AM
Lab ID: 2112C34-003G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	1.6	0.0056	0.010		mg/L	5	12/22/2021 11:32:37 A	A84736
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2021 11:31:14 A	A84736
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2021 11:31:14 A	A84736
Iron	2.1	0.052	0.10	*	mg/L	5	12/22/2021 11:32:37 A	A84736
Manganese	2.4	0.0029	0.010	*	mg/L	5	12/22/2021 11:32:37 A	A84736
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 11:31:14 A	A84736
Zinc	0.015	0.0032	0.010		mg/L	1	12/22/2021 11:31:14 A	A84736
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0062	0.00012	0.0010		mg/L	1	12/30/2021 2:16:02 PM	A84886
Copper	ND	0.00037	0.0010		mg/L	1	12/30/2021 2:16:02 PM	A84886
Lead	ND	0.000057	0.00050		mg/L	1	12/30/2021 2:16:02 PM	A84886
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 2:16:02 PM	A84886
Uranium	0.0036	0.000065	0.00050		mg/L	1	12/30/2021 2:16:02 PM	A84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:05:16 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:15:00 AM
Lab ID: 2112C34-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	9600	23	100		µg/L	100	12/28/2021 11:15:15 P	R84831
Toluene	4100	20	100		µg/L	100	12/28/2021 11:15:15 P	R84831
Ethylbenzene	930	2.1	10		µg/L	10	12/28/2021 11:43:50 P	R84831
Methyl tert-butyl ether (MTBE)	390	3.9	10		µg/L	10	12/28/2021 11:43:50 P	R84831
1,2,4-Trimethylbenzene	280	1.2	10		µg/L	10	12/28/2021 11:43:50 P	R84831
1,3,5-Trimethylbenzene	21	1.8	10		µg/L	10	12/28/2021 11:43:50 P	R84831
1,2-Dichloroethane (EDC)	3.9	2.5	10	J	µg/L	10	12/28/2021 11:43:50 P	R84831
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	12/28/2021 11:43:50 P	R84831
Naphthalene	89	5.0	20		µg/L	10	12/28/2021 11:43:50 P	R84831
1-Methylnaphthalene	ND	8.4	40		µg/L	10	12/28/2021 11:43:50 P	R84831
2-Methylnaphthalene	7.9	6.9	40	J	µg/L	10	12/28/2021 11:43:50 P	R84831
Acetone	ND	25	100		µg/L	10	12/28/2021 11:43:50 P	R84831
Bromomethane	ND	8.5	30		µg/L	10	12/28/2021 11:43:50 P	R84831
2-Butanone	ND	20	100		µg/L	10	12/28/2021 11:43:50 P	R84831
Chlorobenzene	ND	1.6	10		µg/L	10	12/28/2021 11:43:50 P	R84831
Chloroethane	ND	3.8	20		µg/L	10	12/28/2021 11:43:50 P	R84831
Chloroform	3.8	1.3	10	J	µg/L	10	12/28/2021 11:43:50 P	R84831
Chloromethane	ND	4.1	30		µg/L	10	12/28/2021 11:43:50 P	R84831
cis-1,2-DCE	ND	3.9	10		µg/L	10	12/28/2021 11:43:50 P	R84831
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	12/28/2021 11:43:50 P	R84831
1,4-Dichlorobenzene	3.5	2.1	10	J	µg/L	10	12/28/2021 11:43:50 P	R84831
1,1-Dichloroethane	5.8	2.7	10	J	µg/L	10	12/28/2021 11:43:50 P	R84831
1,1-Dichloroethene	ND	2.0	10		µg/L	10	12/28/2021 11:43:50 P	R84831
1,2-Dichloropropane	ND	2.0	10		µg/L	10	12/28/2021 11:43:50 P	R84831
2-Hexanone	ND	18	100		µg/L	10	12/28/2021 11:43:50 P	R84831
Isopropylbenzene	26	1.8	10		µg/L	10	12/28/2021 11:43:50 P	R84831
4-Isopropyltoluene	ND	2.0	10		µg/L	10	12/28/2021 11:43:50 P	R84831
4-Methyl-2-pentanone	ND	8.8	100		µg/L	10	12/28/2021 11:43:50 P	R84831
Methylene Chloride	ND	5.0	30		µg/L	10	12/28/2021 11:43:50 P	R84831
n-Butylbenzene	3.2	2.5	30	J	µg/L	10	12/28/2021 11:43:50 P	R84831
n-Propylbenzene	66	1.8	10		µg/L	10	12/28/2021 11:43:50 P	R84831
sec-Butylbenzene	2.6	1.4	10	J	µg/L	10	12/28/2021 11:43:50 P	R84831
Styrene	2.1	1.4	10	J	µg/L	10	12/28/2021 11:43:50 P	R84831
tert-Butylbenzene	ND	2.4	10		µg/L	10	12/28/2021 11:43:50 P	R84831
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	12/28/2021 11:43:50 P	R84831
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	12/28/2021 11:43:50 P	R84831
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	12/28/2021 11:43:50 P	R84831
1,1,2-Trichloroethane	ND	2.0	10		µg/L	10	12/28/2021 11:43:50 P	R84831
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	12/28/2021 11:43:50 P	R84831
Vinyl chloride	ND	3.2	10		µg/L	10	12/28/2021 11:43:50 P	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:15:00 AM
Lab ID: 2112C34-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	1500	3.7	15		µg/L	10	12/28/2021 11:43:50 P	R84831
Surr: 1,2-Dichloroethane-d4	92.6	0	70-130		%Rec	10	12/28/2021 11:43:50 P	R84831
Surr: 4-Bromofluorobenzene	87.2	0	70-130		%Rec	10	12/28/2021 11:43:50 P	R84831
Surr: Dibromofluoromethane	89.1	0	70-130		%Rec	10	12/28/2021 11:43:50 P	R84831
Surr: Toluene-d8	102	0	70-130		%Rec	10	12/28/2021 11:43:50 P	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	29	0.12	0.50		mg/L	10	12/28/2021 11:43:50 P	G84831
Surr: 4-Bromofluorobenzene	96.5	0	70-130		%Rec	10	12/28/2021 11:43:50 P	G84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:15:00 AM
Lab ID: 2112C34-004B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0035	0.0094		µg/L	1	12/29/2021 11:11:37 P	64768

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:15:00 AM
Lab ID: 2112C34-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.6	0.016	0.064		mg/L	1	12/28/2021 4:05:36 PM	64709
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 4:05:36 PM	64709
Surr: DNOP	103	0	15-142		%Rec	1	12/28/2021 4:05:36 PM	64709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:15:00 AM
Lab ID: 2112C34-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/7/2022 2:31:42 AM	64740
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 2:31:42 AM	64740
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/7/2022 2:31:42 AM	64740
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 2:31:42 AM	64740
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/7/2022 2:31:42 AM	64740
Carbazole	ND	0.56	5.0		µg/L	1	1/7/2022 2:31:42 AM	64740
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 2:31:42 AM	64740
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/7/2022 2:31:42 AM	64740
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/7/2022 2:31:42 AM	64740
Diethyl phthalate	ND	3.9	10		µg/L	1	1/7/2022 2:31:42 AM	64740
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 2:31:42 AM	64740
2,4-Dimethylphenol	3.0	0.97	5.0	J	µg/L	1	1/7/2022 2:31:42 AM	64740
2-Methylphenol	6.6	0.51	5.0		µg/L	1	1/7/2022 2:31:42 AM	64740
3+4-Methylphenol	6.3	0.45	5.0		µg/L	1	1/7/2022 2:31:42 AM	64740
Phenol	52	0.33	5.0		µg/L	1	1/7/2022 2:31:42 AM	64740
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/7/2022 2:31:42 AM	64740
Surr: 2-Fluorophenol	0	0	15-87	S	%Rec	1	1/7/2022 2:31:42 AM	64740
Surr: Phenol-d5	51.2	0	15-67.5		%Rec	1	1/7/2022 2:31:42 AM	64740
Surr: 2,4,6-Tribromophenol	79.5	0	15-122		%Rec	1	1/7/2022 2:31:42 AM	64740
Surr: Nitrobenzene-d5	74.8	0	15-103		%Rec	1	1/7/2022 2:31:42 AM	64740
Surr: 2-Fluorobiphenyl	70.6	0	15-103		%Rec	1	1/7/2022 2:31:42 AM	64740
Surr: 4-Terphenyl-d14	103	0	45-137		%Rec	1	1/7/2022 2:31:42 AM	64740
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.4	0.048	1.0		µg/L	1	1/6/2022 6:09:00 AM	64693
Naphthalene	59	0.34	1.0		µg/L	10	1/6/2022 3:05:00 PM	64693
1-Methylnaphthalene	7.1	0.024	0.10		µg/L	1	1/6/2022 6:09:00 AM	64693
2-Methylnaphthalene	7.7	0.034	0.10		µg/L	1	1/6/2022 6:09:00 AM	64693
Acenaphthene	2.3	0.031	0.10		µg/L	1	1/6/2022 6:09:00 AM	64693
Fluorene	0.58	0.031	0.10		µg/L	1	1/6/2022 6:09:00 AM	64693
Phenanthrene	0.28	0.057	0.10		µg/L	1	1/6/2022 6:09:00 AM	64693
Anthracene	0.46	0.034	0.10		µg/L	1	1/6/2022 6:09:00 AM	64693
Pyrene	0.24	0.16	0.20		µg/L	1	1/6/2022 6:09:00 AM	64693
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	1/6/2022 6:09:00 AM	64693
Chrysene	ND	0.024	0.10		µg/L	1	1/6/2022 6:09:00 AM	64693
Surr: Nitrobenzene-d5	76.0	0	21.9-89.8		%Rec	1	1/6/2022 6:09:00 AM	64693
Surr: 2-Fluorobiphenyl	61.5	0	15-84.5		%Rec	1	1/6/2022 6:09:00 AM	64693
Surr: 4-Terphenyl-d14	91.0	0	73.1-152		%Rec	1	1/6/2022 6:09:00 AM	64693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:15:00 AM
Lab ID: 2112C34-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.70	0.20	0.50		mg/L	5	12/22/2021 12:31:14 P	R84761
Chloride	380	12	25	*	mg/L	50	1/6/2022 10:43:33 AM	R85016
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	12/22/2021 12:31:14 P	R84761
Nitrogen, Nitrate (As N)	0.11	0.050	0.50	J	mg/L	5	12/22/2021 12:31:14 P	R84761
Sulfate	ND	1.2	2.5		mg/L	5	12/22/2021 12:31:14 P	R84761

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:15:00 AM
Lab ID: 2112C34-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	3.5	0.016	0.030	*	mg/L	10	12/29/2021 10:45:56 A	64738
Cadmium	ND	0.0015	0.0020		mg/L	1	12/29/2021 10:44:30 A	64738
Chromium	ND	0.0021	0.0060		mg/L	1	12/29/2021 10:44:30 A	64738
Iron	6.9	0.13	0.50	*	mg/L	10	12/29/2021 10:45:56 A	64738
Manganese	3.4	0.0081	0.020	*	mg/L	10	12/29/2021 10:45:56 A	64738
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 10:44:30 A	64738
Zinc	ND	0.0064	0.010		mg/L	1	12/29/2021 10:44:30 A	64738
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.00052	0.00013	0.0010	J	mg/L	1	12/28/2021 3:36:30 PM	64738
Copper	ND	0.00040	0.0010		mg/L	1	12/28/2021 3:36:30 PM	64738
Lead	0.00054	0.000061	0.00050		mg/L	1	12/28/2021 3:36:30 PM	64738
Selenium	ND	0.00037	0.0010		mg/L	1	12/28/2021 3:36:30 PM	64738
Uranium	0.00067	0.000069	0.00050		mg/L	1	12/28/2021 3:36:30 PM	64738
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:07:25 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:15:00 AM
Lab ID: 2112C34-004G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	3.4	0.0056	0.010	*	mg/L	5	12/22/2021 11:35:41 A	A84736
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2021 11:34:18 A	A84736
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2021 11:34:18 A	A84736
Iron	7.1	0.10	0.20	*	mg/L	10	12/22/2021 12:17:39 P	A84736
Manganese	3.4	0.0029	0.010	*	mg/L	5	12/22/2021 11:35:41 A	A84736
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 11:34:18 A	A84736
Zinc	0.075	0.0032	0.010		mg/L	1	12/22/2021 11:34:18 A	A84736
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00038	0.00012	0.0010	J	mg/L	1	12/30/2021 2:18:43 PM	A84886
Copper	ND	0.00037	0.0010		mg/L	1	12/30/2021 2:18:43 PM	A84886
Lead	0.00015	0.000057	0.00050	J	mg/L	1	12/30/2021 2:18:43 PM	A84886
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 2:18:43 PM	A84886
Uranium	0.00062	0.000065	0.00050		mg/L	1	12/30/2021 2:18:43 PM	A84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:09:34 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:35:00 AM
Lab ID: 2112C34-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.95	0.23	1.0	J	µg/L	1	12/29/2021 12:12:28 A	R84831
Toluene	0.45	0.20	1.0	J	µg/L	1	12/29/2021 12:12:28 A	R84831
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
Methyl tert-butyl ether (MTBE)	1.1	0.39	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
1,2,4-Trimethylbenzene	0.24	0.12	1.0	J	µg/L	1	12/29/2021 12:12:28 A	R84831
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
Naphthalene	7.1	0.50	2.0		µg/L	1	12/29/2021 12:12:28 A	R84831
1-Methylnaphthalene	7.5	0.84	4.0		µg/L	1	12/29/2021 12:12:28 A	R84831
2-Methylnaphthalene	1.6	0.69	4.0	J	µg/L	1	12/29/2021 12:12:28 A	R84831
Acetone	ND	2.5	10		µg/L	1	12/29/2021 12:12:28 A	R84831
Bromomethane	ND	0.85	3.0		µg/L	1	12/29/2021 12:12:28 A	R84831
2-Butanone	ND	2.0	10		µg/L	1	12/29/2021 12:12:28 A	R84831
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
Chloroethane	ND	0.38	2.0		µg/L	1	12/29/2021 12:12:28 A	R84831
Chloroform	ND	0.13	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
Chloromethane	ND	0.41	3.0		µg/L	1	12/29/2021 12:12:28 A	R84831
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
2-Hexanone	ND	1.8	10		µg/L	1	12/29/2021 12:12:28 A	R84831
Isopropylbenzene	0.37	0.18	1.0	J	µg/L	1	12/29/2021 12:12:28 A	R84831
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/29/2021 12:12:28 A	R84831
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/29/2021 12:12:28 A	R84831
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/29/2021 12:12:28 A	R84831
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
sec-Butylbenzene	0.51	0.14	1.0	J	µg/L	1	12/29/2021 12:12:28 A	R84831
Styrene	ND	0.14	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
Trichloroethene (TCE)	0.24	0.20	1.0	J	µg/L	1	12/29/2021 12:12:28 A	R84831
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/29/2021 12:12:28 A	R84831
Xylenes, Total	0.37	0.37	1.5	J	µg/L	1	12/29/2021 12:12:28 A	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:35:00 AM
Lab ID: 2112C34-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	12/29/2021 12:12:28 A	R84831
Surr: 4-Bromofluorobenzene	93.7	0	70-130		%Rec	1	12/29/2021 12:12:28 A	R84831
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	12/29/2021 12:12:28 A	R84831
Surr: Toluene-d8	103	0	70-130		%Rec	1	12/29/2021 12:12:28 A	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.024	0.012	0.050	J	mg/L	1	12/29/2021 12:12:28 A	G84831
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	12/29/2021 12:12:28 A	G84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:35:00 AM
Lab ID: 2112C34-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.15	0.016	0.064		mg/L	1	12/28/2021 4:29:22 PM	64709
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 4:29:22 PM	64709
Surr: DNOP	104	0	15-142		%Rec	1	12/28/2021 4:29:22 PM	64709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:35:00 AM
Lab ID: 2112C34-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/7/2022 3:13:05 AM	64740
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 3:13:05 AM	64740
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/7/2022 3:13:05 AM	64740
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 3:13:05 AM	64740
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/7/2022 3:13:05 AM	64740
Carbazole	ND	0.56	5.0		µg/L	1	1/7/2022 3:13:05 AM	64740
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 3:13:05 AM	64740
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/7/2022 3:13:05 AM	64740
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/7/2022 3:13:05 AM	64740
Diethyl phthalate	ND	3.9	10		µg/L	1	1/7/2022 3:13:05 AM	64740
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 3:13:05 AM	64740
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/7/2022 3:13:05 AM	64740
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/7/2022 3:13:05 AM	64740
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/7/2022 3:13:05 AM	64740
Phenol	ND	0.33	5.0		µg/L	1	1/7/2022 3:13:05 AM	64740
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/7/2022 3:13:05 AM	64740
Surr: 2-Fluorophenol	60.5	0	15-87		%Rec	1	1/7/2022 3:13:05 AM	64740
Surr: Phenol-d5	44.5	0	15-67.5		%Rec	1	1/7/2022 3:13:05 AM	64740
Surr: 2,4,6-Tribromophenol	67.6	0	15-122		%Rec	1	1/7/2022 3:13:05 AM	64740
Surr: Nitrobenzene-d5	67.3	0	15-103		%Rec	1	1/7/2022 3:13:05 AM	64740
Surr: 2-Fluorobiphenyl	63.8	0	15-103		%Rec	1	1/7/2022 3:13:05 AM	64740
Surr: 4-Terphenyl-d14	104	0	45-137		%Rec	1	1/7/2022 3:13:05 AM	64740
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	1.3	0.048	1.0		µg/L	1	1/6/2022 6:54:00 AM	64693
Naphthalene	3.0	0.034	0.10		µg/L	1	1/6/2022 6:54:00 AM	64693
1-Methylnaphthalene	4.5	0.024	0.10		µg/L	1	1/6/2022 6:54:00 AM	64693
2-Methylnaphthalene	0.88	0.034	0.10		µg/L	1	1/6/2022 6:54:00 AM	64693
Acenaphthene	0.28	0.031	0.10		µg/L	1	1/6/2022 6:54:00 AM	64693
Fluorene	0.42	0.031	0.10		µg/L	1	1/6/2022 6:54:00 AM	64693
Phenanthrene	0.22	0.057	0.10		µg/L	1	1/6/2022 6:54:00 AM	64693
Anthracene	ND	0.034	0.10		µg/L	1	1/6/2022 6:54:00 AM	64693
Pyrene	ND	0.16	0.20		µg/L	1	1/6/2022 6:54:00 AM	64693
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	1/6/2022 6:54:00 AM	64693
Chrysene	ND	0.024	0.10		µg/L	1	1/6/2022 6:54:00 AM	64693
Surr: Nitrobenzene-d5	66.0	0	21.9-89.8		%Rec	1	1/6/2022 6:54:00 AM	64693
Surr: 2-Fluorobiphenyl	55.0	0	15-84.5		%Rec	1	1/6/2022 6:54:00 AM	64693
Surr: 4-Terphenyl-d14	96.0	0	73.1-152		%Rec	1	1/6/2022 6:54:00 AM	64693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:35:00 AM
Lab ID: 2112C34-005E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.80	0.040	0.10		mg/L	1	12/22/2021 12:56:58 P	R84761
Chloride	220	5.0	10		mg/L	20	12/22/2021 1:09:51 PM	R84761
Nitrogen, Nitrite (As N)	ND	0.0053	0.10		mg/L	1	12/22/2021 12:56:58 P	R84761
Nitrogen, Nitrate (As N)	2.0	0.010	0.10		mg/L	1	12/22/2021 12:56:58 P	R84761
Sulfate	510	5.0	10	*	mg/L	20	12/22/2021 1:09:51 PM	R84761

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:35:00 AM
Lab ID: 2112C34-005F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.045	0.0016	0.0030		mg/L	1	12/29/2021 10:47:21 A	64738
Cadmium	ND	0.0015	0.0020		mg/L	1	12/29/2021 10:47:21 A	64738
Chromium	ND	0.0021	0.0060		mg/L	1	12/29/2021 10:47:21 A	64738
Iron	0.39	0.013	0.050	*	mg/L	1	12/29/2021 10:47:21 A	64738
Manganese	0.48	0.00081	0.0020	*	mg/L	1	12/29/2021 10:47:21 A	64738
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 10:47:21 A	64738
Zinc	ND	0.0064	0.010		mg/L	1	12/29/2021 10:47:21 A	64738
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.00093	0.00013	0.0010	J	mg/L	1	12/28/2021 3:38:57 PM	64738
Copper	0.0019	0.00040	0.0010		mg/L	1	12/28/2021 3:38:57 PM	64738
Lead	0.00053	0.000061	0.00050		mg/L	1	12/28/2021 3:38:57 PM	64738
Selenium	0.0018	0.00037	0.0010		mg/L	1	12/28/2021 3:38:57 PM	64738
Uranium	0.025	0.00034	0.0025		mg/L	5	12/28/2021 4:00:57 PM	64738
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:11:43 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:35:00 AM
Lab ID: 2112C34-005G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.026	0.0011	0.0020		mg/L	1	12/22/2021 11:37:06 A	A84736
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2021 11:37:06 A	A84736
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2021 11:37:06 A	A84736
Iron	ND	0.010	0.020		mg/L	1	12/22/2021 11:37:06 A	A84736
Manganese	0.41	0.00058	0.0020	*	mg/L	1	12/22/2021 11:37:06 A	A84736
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 11:37:06 A	A84736
Zinc	0.094	0.0032	0.010		mg/L	1	12/22/2021 11:37:06 A	A84736
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00079	0.00012	0.0010	J	mg/L	1	12/30/2021 3:52:51 PM	A84886
Copper	0.0013	0.00037	0.0010		mg/L	1	12/30/2021 3:52:51 PM	A84886
Lead	ND	0.000057	0.00050		mg/L	1	12/30/2021 3:52:51 PM	A84886
Selenium	0.0013	0.00034	0.0010		mg/L	1	12/30/2021 3:52:51 PM	A84886
Uranium	0.023	0.000065	0.00050		mg/L	1	12/30/2021 3:52:51 PM	A84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:13:53 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:35:00 AM
Lab ID: 2112C34-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
Toluene	ND	0.20	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
Naphthalene	ND	0.50	2.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
Acetone	3.6	2.5	10	J	µg/L	1	12/29/2021 3:03:59 AM	R84831
Bromomethane	ND	0.85	3.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
2-Butanone	ND	2.0	10		µg/L	1	12/29/2021 3:03:59 AM	R84831
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
Chloroethane	ND	0.38	2.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
Chloroform	ND	0.13	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
Chloromethane	ND	0.41	3.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
2-Hexanone	ND	1.8	10		µg/L	1	12/29/2021 3:03:59 AM	R84831
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/29/2021 3:03:59 AM	R84831
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
Styrene	ND	0.14	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/29/2021 3:03:59 AM	R84831
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/29/2021 3:03:59 AM	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021 10:35:00 AM
Lab ID: 2112C34-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	12/29/2021 3:03:59 AM	R84831
Surr: 4-Bromofluorobenzene	98.7	0	70-130		%Rec	1	12/29/2021 3:03:59 AM	R84831
Surr: Dibromofluoromethane	99.0	0	70-130		%Rec	1	12/29/2021 3:03:59 AM	R84831
Surr: Toluene-d8	102	0	70-130		%Rec	1	12/29/2021 3:03:59 AM	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/29/2021 3:03:59 AM	G84831
Surr: 4-Bromofluorobenzene	110	0	70-130		%Rec	1	12/29/2021 3:03:59 AM	G84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021
Lab ID: 2112C34-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	1600	23	100		µg/L	100	12/29/2021 2:34:44 PM	R84851
Toluene	5800	20	100		µg/L	100	12/29/2021 2:34:44 PM	R84851
Ethylbenzene	490	2.1	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
Methyl tert-butyl ether (MTBE)	4400	39	100		µg/L	100	12/29/2021 2:34:44 PM	R84851
1,2,4-Trimethylbenzene	370	1.2	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
1,3,5-Trimethylbenzene	100	1.8	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
1,2-Dichloroethane (EDC)	ND	2.5	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
Naphthalene	67	5.0	20		µg/L	10	12/29/2021 3:32:28 AM	R84831
1-Methylnaphthalene	18	8.4	40	J	µg/L	10	12/29/2021 3:32:28 AM	R84831
2-Methylnaphthalene	22	6.9	40	J	µg/L	10	12/29/2021 3:32:28 AM	R84831
Acetone	ND	25	100		µg/L	10	12/29/2021 3:32:28 AM	R84831
Bromomethane	ND	8.5	30		µg/L	10	12/29/2021 3:32:28 AM	R84831
2-Butanone	ND	20	100		µg/L	10	12/29/2021 3:32:28 AM	R84831
Chlorobenzene	ND	1.6	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
Chloroethane	ND	3.8	20		µg/L	10	12/29/2021 3:32:28 AM	R84831
Chloroform	5.4	1.3	10	J	µg/L	10	12/29/2021 3:32:28 AM	R84831
Chloromethane	ND	4.1	30		µg/L	10	12/29/2021 3:32:28 AM	R84831
cis-1,2-DCE	ND	3.9	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
1,1-Dichloroethane	5.9	2.7	10	J	µg/L	10	12/29/2021 3:32:28 AM	R84831
1,1-Dichloroethene	ND	2.0	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
1,2-Dichloropropane	ND	2.0	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
2-Hexanone	ND	18	100		µg/L	10	12/29/2021 3:32:28 AM	R84831
Isopropylbenzene	31	1.8	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
4-Isopropyltoluene	3.7	2.0	10	J	µg/L	10	12/29/2021 3:32:28 AM	R84831
4-Methyl-2-pentanone	ND	8.8	100		µg/L	10	12/29/2021 3:32:28 AM	R84831
Methylene Chloride	ND	5.0	30		µg/L	10	12/29/2021 3:32:28 AM	R84831
n-Butylbenzene	7.7	2.5	30	J	µg/L	10	12/29/2021 3:32:28 AM	R84831
n-Propylbenzene	73	1.8	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
sec-Butylbenzene	ND	1.4	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
Styrene	1.4	1.4	10	J	µg/L	10	12/29/2021 3:32:28 AM	R84831
tert-Butylbenzene	ND	2.4	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
1,1,2-Trichloroethane	ND	2.0	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
Vinyl chloride	ND	3.2	10		µg/L	10	12/29/2021 3:32:28 AM	R84831
Xylenes, Total	2400	3.7	15		µg/L	10	12/29/2021 3:32:28 AM	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021
Lab ID: 2112C34-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Surr: 1,2-Dichloroethane-d4	96.6	0	70-130		%Rec	10	12/29/2021 3:32:28 AM	R84831
Surr: 4-Bromofluorobenzene	83.4	0	70-130		%Rec	10	12/29/2021 3:32:28 AM	R84831
Surr: Dibromofluoromethane	89.6	0	70-130		%Rec	10	12/29/2021 3:32:28 AM	R84831
Surr: Toluene-d8	102	0	70-130		%Rec	10	12/29/2021 3:32:28 AM	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	28	0.12	0.50		mg/L	10	12/29/2021 3:32:28 AM	G84831
Surr: 4-Bromofluorobenzene	90.1	0	70-130		%Rec	10	12/29/2021 3:32:28 AM	G84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021
Lab ID: 2112C34-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.9	0.016	0.064		mg/L	1	12/28/2021 4:53:06 PM	64709
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 4:53:06 PM	64709
Surr: DNOP	101	0	15-142		%Rec	1	12/28/2021 4:53:06 PM	64709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021
Lab ID: 2112C34-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/7/2022 3:53:48 AM	64740
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 3:53:48 AM	64740
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/7/2022 3:53:48 AM	64740
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 3:53:48 AM	64740
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/7/2022 3:53:48 AM	64740
Carbazole	ND	0.56	5.0		µg/L	1	1/7/2022 3:53:48 AM	64740
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 3:53:48 AM	64740
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/7/2022 3:53:48 AM	64740
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/7/2022 3:53:48 AM	64740
Diethyl phthalate	ND	3.9	10		µg/L	1	1/7/2022 3:53:48 AM	64740
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 3:53:48 AM	64740
2,4-Dimethylphenol	4.3	0.97	5.0	J	µg/L	1	1/7/2022 3:53:48 AM	64740
2-Methylphenol	22	0.51	5.0		µg/L	1	1/7/2022 3:53:48 AM	64740
3+4-Methylphenol	11	0.45	5.0		µg/L	1	1/7/2022 3:53:48 AM	64740
Phenol	9.2	0.33	5.0		µg/L	1	1/7/2022 3:53:48 AM	64740
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/7/2022 3:53:48 AM	64740
Surr: 2-Fluorophenol	0	0	15-87	S	%Rec	1	1/7/2022 3:53:48 AM	64740
Surr: Phenol-d5	41.5	0	15-67.5		%Rec	1	1/7/2022 3:53:48 AM	64740
Surr: 2,4,6-Tribromophenol	78.7	0	15-122		%Rec	1	1/7/2022 3:53:48 AM	64740
Surr: Nitrobenzene-d5	65.1	0	15-103		%Rec	1	1/7/2022 3:53:48 AM	64740
Surr: 2-Fluorobiphenyl	65.2	0	15-103		%Rec	1	1/7/2022 3:53:48 AM	64740
Surr: 4-Terphenyl-d14	96.2	0	45-137		%Rec	1	1/7/2022 3:53:48 AM	64740
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	4.2	0.048	1.0		µg/L	1	1/6/2022 7:38:00 AM	64693
Naphthalene	39	0.34	1.0		µg/L	10	1/6/2022 3:51:00 PM	64693
1-Methylnaphthalene	15	0.024	0.10		µg/L	1	1/6/2022 7:38:00 AM	64693
2-Methylnaphthalene	18	0.034	0.10		µg/L	1	1/6/2022 7:38:00 AM	64693
Acenaphthene	1.0	0.031	0.10		µg/L	1	1/6/2022 7:38:00 AM	64693
Fluorene	1.9	0.031	0.10		µg/L	1	1/6/2022 7:38:00 AM	64693
Phenanthrene	1.5	0.057	0.10		µg/L	1	1/6/2022 7:38:00 AM	64693
Anthracene	0.42	0.034	0.10		µg/L	1	1/6/2022 7:38:00 AM	64693
Pyrene	0.28	0.16	0.20		µg/L	1	1/6/2022 7:38:00 AM	64693
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	1/6/2022 7:38:00 AM	64693
Chrysene	ND	0.024	0.10		µg/L	1	1/6/2022 7:38:00 AM	64693
Surr: Nitrobenzene-d5	7.50	0	21.9-89.8	S	%Rec	1	1/6/2022 7:38:00 AM	64693
Surr: 2-Fluorobiphenyl	64.5	0	15-84.5		%Rec	1	1/6/2022 7:38:00 AM	64693
Surr: 4-Terphenyl-d14	108	0	73.1-152		%Rec	1	1/6/2022 7:38:00 AM	64693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021
Lab ID: 2112C34-007E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.70	0.20	0.50		mg/L	5	12/22/2021 1:22:43 PM	R84761
Chloride	190	5.0	10		mg/L	20	12/22/2021 1:35:36 PM	R84761
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	12/22/2021 1:22:43 PM	R84761
Nitrogen, Nitrate (As N)	0.20	0.050	0.50	J	mg/L	5	12/22/2021 1:22:43 PM	R84761
Sulfate	4.8	1.2	2.5		mg/L	5	12/22/2021 1:22:43 PM	R84761

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021
Lab ID: 2112C34-007F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.34	0.0016	0.0030		mg/L	1	12/29/2021 10:50:41 A	64738
Cadmium	ND	0.0015	0.0020		mg/L	1	12/29/2021 10:50:41 A	64738
Chromium	ND	0.0021	0.0060		mg/L	1	12/29/2021 10:50:41 A	64738
Iron	0.99	0.013	0.050	*	mg/L	1	12/29/2021 10:50:41 A	64738
Manganese	3.4	0.0041	0.010	*	mg/L	5	12/29/2021 10:52:05 A	64738
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 10:50:41 A	64738
Zinc	ND	0.0064	0.010		mg/L	1	12/29/2021 10:50:41 A	64738
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0054	0.00013	0.0010		mg/L	1	12/28/2021 3:41:23 PM	64738
Copper	0.0013	0.00040	0.0010		mg/L	1	12/28/2021 3:41:23 PM	64738
Lead	0.00054	0.000061	0.00050		mg/L	1	12/28/2021 3:41:23 PM	64738
Selenium	ND	0.00037	0.0010		mg/L	1	12/28/2021 3:41:23 PM	64738
Uranium	0.0053	0.000069	0.00050		mg/L	1	12/28/2021 3:41:23 PM	64738
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 2:06:45 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-21-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/21/2021
Lab ID: 2112C34-007G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.35	0.0011	0.0020		mg/L	1	12/22/2021 11:40:26 A	A84736
Cadmium	ND	0.00098	0.0020		mg/L	1	12/22/2021 11:40:26 A	A84736
Chromium	ND	0.0020	0.0060		mg/L	1	12/22/2021 11:40:26 A	A84736
Iron	0.21	0.010	0.020		mg/L	1	12/22/2021 11:40:26 A	A84736
Manganese	3.5	0.0029	0.010	*	mg/L	5	12/22/2021 11:42:06 A	A84736
Silver	ND	0.0013	0.0050		mg/L	1	12/22/2021 11:40:26 A	A84736
Zinc	0.012	0.0032	0.010		mg/L	1	12/22/2021 11:40:26 A	A84736
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0045	0.00012	0.0010		mg/L	1	12/30/2021 3:55:33 PM	A84886
Copper	ND	0.00037	0.0010		mg/L	1	12/30/2021 3:55:33 PM	A84886
Lead	0.00011	0.000057	0.00050	J	mg/L	1	12/30/2021 3:55:33 PM	A84886
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 3:55:33 PM	A84886
Uranium	0.0048	0.000065	0.00050		mg/L	1	12/30/2021 3:55:33 PM	A84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/12/2022 2:04:27 PM	64979

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-17-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 3:30:00 PM
Lab ID: 2112C34-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
Toluene	0.62	0.20	1.0	J	µg/L	1	12/29/2021 4:00:55 AM	R84831
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
1,2,4-Trimethylbenzene	0.20	0.12	1.0	J	µg/L	1	12/29/2021 4:00:55 AM	R84831
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
Naphthalene	ND	0.50	2.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
Acetone	3.2	2.5	10	J	µg/L	1	12/29/2021 4:00:55 AM	R84831
Bromomethane	ND	0.85	3.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
2-Butanone	ND	2.0	10		µg/L	1	12/29/2021 4:00:55 AM	R84831
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
Chloroethane	ND	0.38	2.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
Chloroform	ND	0.13	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
Chloromethane	ND	0.41	3.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
2-Hexanone	ND	1.8	10		µg/L	1	12/29/2021 4:00:55 AM	R84831
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/29/2021 4:00:55 AM	R84831
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
Styrene	ND	0.14	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/29/2021 4:00:55 AM	R84831
Xylenes, Total	0.43	0.37	1.5	J	µg/L	1	12/29/2021 4:00:55 AM	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-17-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/17/2021 3:30:00 PM
Lab ID: 2112C34-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	1	12/29/2021 4:00:55 AM	R84831
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	12/29/2021 4:00:55 AM	R84831
Surr: Dibromofluoromethane	94.8	0	70-130		%Rec	1	12/29/2021 4:00:55 AM	R84831
Surr: Toluene-d8	99.6	0	70-130		%Rec	1	12/29/2021 4:00:55 AM	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.013	0.012	0.050	J	mg/L	1	12/29/2021 4:00:55 AM	G84831
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	12/29/2021 4:00:55 AM	G84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip blank
Project: 2021 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2112C34-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
Toluene	ND	0.20	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
1,2,4-Trimethylbenzene	0.12	0.12	1.0	J	µg/L	1	12/29/2021 4:29:24 AM	R84831
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
Naphthalene	ND	0.50	2.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
Acetone	ND	2.5	10		µg/L	1	12/29/2021 4:29:24 AM	R84831
Bromomethane	ND	0.85	3.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
2-Butanone	ND	2.0	10		µg/L	1	12/29/2021 4:29:24 AM	R84831
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
Chloroethane	ND	0.38	2.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
Chloroform	ND	0.13	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
Chloromethane	ND	0.41	3.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
2-Hexanone	ND	1.8	10		µg/L	1	12/29/2021 4:29:24 AM	R84831
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/29/2021 4:29:24 AM	R84831
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
Styrene	ND	0.14	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/29/2021 4:29:24 AM	R84831
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/29/2021 4:29:24 AM	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip blank
Project: 2021 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2112C34-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Surr: 1,2-Dichloroethane-d4	99.0	0	70-130		%Rec	1	12/29/2021 4:29:24 AM	R84831
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	12/29/2021 4:29:24 AM	R84831
Surr: Dibromofluoromethane	95.5	0	70-130		%Rec	1	12/29/2021 4:29:24 AM	R84831
Surr: Toluene-d8	101	0	70-130		%Rec	1	12/29/2021 4:29:24 AM	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112C34**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip blank
Project: 2021 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2112C34-009B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	12/29/2021 11:26:30 P	64768

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A84736** RunNo: **84736**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2979931** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **A84736** RunNo: **84736**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2979933** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0030	0.002000	0	90.7	50	150			J
Cadmium	0.0023	0.0020	0.002000	0	114	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Iron	0.022	0.050	0.02000	0	109	50	150			J
Manganese	0.0020	0.0020	0.002000	0	100	50	150			
Silver	0.0048	0.0050	0.005000	0	95.8	50	150			J
Zinc	0.011	0.010	0.01000	0	108	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A84736** RunNo: **84736**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2979935** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	105	85	115			
Cadmium	0.53	0.0020	0.5000	0	106	85	115			
Chromium	0.53	0.0060	0.5000	0	105	85	115			
Iron	0.51	0.050	0.5000	0	101	85	115			
Manganese	0.51	0.0020	0.5000	0	102	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Zinc	0.55	0.010	0.5000	0	109	85	115			

Sample ID: **MB-64738** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **64738** RunNo: **84839**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984183** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64738** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **64738** RunNo: **84839**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984183** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS-64738** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **64738** RunNo: **84839**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984185** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0030	0.002000	0	91.0	50	150			J
Cadmium	0.0016	0.0020	0.002000	0	77.7	50	150			J
Chromium	0.0064	0.0060	0.006000	0	106	50	150			
Iron	0.024	0.050	0.02000	0	121	50	150			J
Manganese	0.0022	0.0020	0.002000	0	111	50	150			
Silver	0.0051	0.0050	0.005000	0	103	50	150			
Zinc	0.0096	0.010	0.01000	0	95.7	50	150			J

Sample ID: **LCS-64738** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **64738** RunNo: **84839**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984253** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	99.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.3	85	115			
Chromium	0.49	0.0060	0.5000	0	98.4	85	115			
Iron	0.52	0.050	0.5000	0	104	85	115			
Manganese	0.48	0.0020	0.5000	0	96.5	85	115			
Silver	0.10	0.0050	0.1000	0	100	85	115			
Zinc	0.49	0.010	0.5000	0	98.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A84736** RunNo: **84736**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2979932** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A84736** RunNo: **84736**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2979934** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	90.7	50	150			J
Cadmium	0.0023	0.0020	0.002000	0	114	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Iron	0.022	0.020	0.02000	0	109	50	150			
Manganese	0.0020	0.0020	0.002000	0	100	50	150			
Silver	0.0048	0.0050	0.005000	0	95.8	50	150			J
Zinc	0.011	0.010	0.01000	0	108	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A84736** RunNo: **84736**
Prep Date: Analysis Date: **12/22/2021** SeqNo: **2979936** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0020	0.5000	0	105	85	115			
Cadmium	0.53	0.0020	0.5000	0	106	85	115			
Chromium	0.53	0.0060	0.5000	0	105	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.51	0.0020	0.5000	0	102	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			
Zinc	0.55	0.010	0.5000	0	109	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64738** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **64738** RunNo: **84824**
Prep Date: **12/28/2021** Analysis Date: **12/28/2021** SeqNo: **2983588** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID: **MSLLLCS-64738** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **64738** RunNo: **84824**
Prep Date: **12/28/2021** Analysis Date: **12/28/2021** SeqNo: **2983589** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			
Copper	0.00095	0.0010	0.001000	0	94.7	50	150			J
Lead	0.00050	0.00050	0.0005000	0	100	50	150			
Selenium	0.0011	0.0010	0.001000	0	112	50	150			
Uranium	0.00050	0.00050	0.0005000	0	100	50	150			

Sample ID: **MSLCS-64738** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **64738** RunNo: **84824**
Prep Date: **12/28/2021** Analysis Date: **12/28/2021** SeqNo: **2983590** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.0	85	115			
Copper	0.024	0.0010	0.02500	0	97.1	85	115			
Lead	0.012	0.00050	0.01250	0	99.1	85	115			
Selenium	0.023	0.0010	0.02500	0	93.0	85	115			
Uranium	0.012	0.00050	0.01250	0	99.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **A84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986042** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986043** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00091	0.0010	0.001000	0	91.2	50	150			J
Copper	0.00096	0.0010	0.001000	0	96.2	50	150			J
Lead	0.00048	0.00050	0.0005000	0	96.7	50	150			J
Selenium	0.0010	0.0010	0.001000	0	99.8	50	150			J
Uranium	0.00048	0.00050	0.0005000	0	95.2	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986044** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Copper	0.025	0.0010	0.02500	0	99.8	85	115			
Lead	0.012	0.00050	0.01250	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	96.6	85	115			
Uranium	0.012	0.00050	0.01250	0	95.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64979** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **64979** RunNo: **85102**
Prep Date: **1/12/2022** Analysis Date: **1/12/2022** SeqNo: **2994400** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCS-64979** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **64979** RunNo: **85102**
Prep Date: **1/12/2022** Analysis Date: **1/12/2022** SeqNo: **2994402** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0054	0.00020	0.005000	0	109	85	115			

Sample ID: **LCSLL-64979** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **64979** RunNo: **85102**
Prep Date: **1/12/2022** Analysis Date: **1/12/2022** SeqNo: **2994428** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00014	0.00020	0.0001500	0	92.4	50	150			J

Sample ID: **2112C34-007FMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP-12-21-21** Batch ID: **64979** RunNo: **85102**
Prep Date: **1/12/2022** Analysis Date: **1/12/2022** SeqNo: **2994431** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0041	0.00020	0.005000	0	81.6	75	125			

Sample ID: **2112C34-007FMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP-12-21-21** Batch ID: **64979** RunNo: **85102**
Prep Date: **1/12/2022** Analysis Date: **1/12/2022** SeqNo: **2994432** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0040	0.00020	0.005000	0	79.9	75	125	2.15	20	

Sample ID: **MB-64998** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **64998** RunNo: **85151**
Prep Date: **1/12/2022** Analysis Date: **1/13/2022** SeqNo: **2995598** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCS-64998** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **64998** RunNo: **85151**
Prep Date: **1/12/2022** Analysis Date: **1/13/2022** SeqNo: **2995600** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	103	85	115			

Sample ID: **LCSLL-64998** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **64998** RunNo: **85151**
Prep Date: **1/12/2022** Analysis Date: **1/13/2022** SeqNo: **2995627** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.000080	0.00020	0.0001500	0	53.2	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R84761**	RunNo: **84761**
Prep Date:	Analysis Date: **12/22/2021**	SeqNo: **2980887** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	0.50								

Sample ID: **2112C34-001EMS**	SampType: **ms**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB-12-21-21**	Batch ID: **R84761**	RunNo: **84761**
Prep Date:	Analysis Date: **12/22/2021**	SeqNo: **2980890** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	103	79.7	110			
Chloride	4.8	0.50	5.000	0	96.4	86.3	114			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	100	83.4	105			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0.03820	101	93.5	110			
Sulfate	9.3	0.50	10.00	0	92.9	90.5	112			

Sample ID: **2112C34-001EMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB-12-21-21**	Batch ID: **R84761**	RunNo: **84761**
Prep Date:	Analysis Date: **12/22/2021**	SeqNo: **2980891** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	79.7	110	1.35	20	
Chloride	4.9	0.50	5.000	0	97.3	86.3	114	0.903	20	
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	101	83.4	105	0.774	20	
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0.03820	102	93.5	110	0.912	20	
Sulfate	9.4	0.50	10.00	0	94.3	90.5	112	1.46	20	

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R84761**	RunNo: **84761**
Prep Date:	Analysis Date: **12/22/2021**	SeqNo: **2980895** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	105	90	110			
Chloride	4.9	0.50	5.000	0	97.4	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	103	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			
Sulfate	9.7	0.50	10.00	0	96.6	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R85016**	RunNo: **85016**							
Prep Date:	Analysis Date: **1/6/2022**	SeqNo: **2991164**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R85016**	RunNo: **85016**							
Prep Date:	Analysis Date: **1/6/2022**	SeqNo: **2991165**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.7	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64768** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **64768** RunNo: **84849**
Prep Date: **12/29/2021** Analysis Date: **12/29/2021** SeqNo: **2985523** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-64768** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **64768** RunNo: **84849**
Prep Date: **12/29/2021** Analysis Date: **12/29/2021** SeqNo: **2985528** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-64768** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **64768** RunNo: **84849**
Prep Date: **12/29/2021** Analysis Date: **12/29/2021** SeqNo: **2985531** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	122	70	130			

Sample ID: **LCSD-64768** SampType: **LCSD** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02** Batch ID: **64768** RunNo: **84849**
Prep Date: **12/29/2021** Analysis Date: **12/29/2021** SeqNo: **2985535** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	117	70	130	3.99	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64698** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **64698** RunNo: **84809**
Prep Date: **12/23/2021** Analysis Date: **12/28/2021** SeqNo: **2984402** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.032		0.03750		85.4	15	142			

Sample ID: **LCS-64698** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **64698** RunNo: **84809**
Prep Date: **12/23/2021** Analysis Date: **12/28/2021** SeqNo: **2984403** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	56.9	31.7	75.4			
Surr: DNOP	0.018		0.01875		94.3	15	142			

Sample ID: **LCSD-64698** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **64698** RunNo: **84809**
Prep Date: **12/23/2021** Analysis Date: **12/28/2021** SeqNo: **2984404** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	58.3	31.7	75.4	2.53	20	
Surr: DNOP	0.019		0.01875		99.8	15	142	0	0	

Sample ID: **MB-64709** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **64709** RunNo: **84809**
Prep Date: **12/23/2021** Analysis Date: **12/28/2021** SeqNo: **2984405** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.020	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.037		0.03750		99.5	15	142			

Sample ID: **LCS-64709** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **64709** RunNo: **84809**
Prep Date: **12/23/2021** Analysis Date: **12/28/2021** SeqNo: **2984406** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	58.2	31.7	75.4			
Surr: DNOP	0.019		0.01875		98.9	15	142			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCSD-64709**	SampType: **LCSD**	TestCode: **EPA Method 8015D Mod: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **64709**	RunNo: **84809**							
Prep Date: **12/23/2021**	Analysis Date: **12/28/2021**	SeqNo: **2984407**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.13	0.064	0.1875	0	68.0	31.7	75.4	15.5	20	
Surr: DNOP	0.020		0.01875		105	15	142	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R84831** RunNo: **84831**
Prep Date: Analysis Date: **12/28/2021** SeqNo: **2983890** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130			
Toluene	20	1.0	20.00	0	99.4	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	104	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.4	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **2112c34-001ams** SampType: **MS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **EB-12-21-21** Batch ID: **R84831** RunNo: **84831**
Prep Date: Analysis Date: **12/28/2021** SeqNo: **2983899** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	19	1.0	20.00	0	96.0	70	130			
Chlorobenzene	20	1.0	20.00	0	99.0	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	92.5	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	90.8	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **2112c34-001amsd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **EB-12-21-21** Batch ID: **R84831** RunNo: **84831**
Prep Date: Analysis Date: **12/28/2021** SeqNo: **2983900** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	92.7	70	130	11.0	20	
Toluene	18	1.0	20.00	0	87.7	70	130	9.05	20	
Chlorobenzene	18	1.0	20.00	0	91.5	70	130	7.88	20	
1,1-Dichloroethene	17	1.0	20.00	0	83.1	70	130	10.7	20	
Trichloroethene (TCE)	17	1.0	20.00	0	83.9	70	130	7.97	20	
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.1	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.5		10.00		94.6	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		101	70	130	0	0	
Surr: Toluene-d8	10		10.00		102	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R84831** RunNo: **84831**
Prep Date: Analysis Date: **12/28/2021** SeqNo: **2983922** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R84831**	RunNo: **84831**
Prep Date:	Analysis Date: **12/28/2021**	SeqNo: **2983922** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R84851**	RunNo: **84851**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984836** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	108	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.1	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R84851**	RunNo: **84851**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984865** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.4	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64740** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **64740** RunNo: **84991**
Prep Date: **12/28/2021** Analysis Date: **1/6/2022** SeqNo: **2990565** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Benzoic acid	ND	20								
Benzyl alcohol	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	10								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
Di-n-octyl phthalate	ND	20								
Dibenzofuran	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Phenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	130		200.0		63.0	15	87			
Surr: Phenol-d5	96		200.0		48.0	15	67.5			
Surr: 2,4,6-Tribromophenol	150		200.0		72.6	15	122			
Surr: Nitrobenzene-d5	70		100.0		69.9	15	103			
Surr: 2-Fluorobiphenyl	66		100.0		66.4	15	103			
Surr: 4-Terphenyl-d14	110		100.0		113	45	137			

Sample ID: **LCS-64740** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **64740** RunNo: **84991**
Prep Date: **12/28/2021** Analysis Date: **1/6/2022** SeqNo: **2990566** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	59	5.0	100.0	0	58.8	15	87.6			
Phenol	85	5.0	200.0	0	42.3	16.8	70.5			
Surr: 2-Fluorophenol	110		200.0		54.8	15	87			
Surr: Phenol-d5	81		200.0		40.6	15	67.5			
Surr: 2,4,6-Tribromophenol	150		200.0		75.0	15	122			
Surr: Nitrobenzene-d5	68		100.0		67.9	15	103			
Surr: 2-Fluorobiphenyl	69		100.0		69.2	15	103			
Surr: 4-Terphenyl-d14	120		100.0		117	45	137			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCSD-64740** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **64740** RunNo: **84991**
Prep Date: **12/28/2021** Analysis Date: **1/6/2022** SeqNo: **2990567** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	58	5.0	100.0	0	58.0	15	87.6	1.28	30.4	
Phenol	80	5.0	200.0	0	40.1	16.8	70.5	5.17	37.2	
Surr: 2-Fluorophenol	100		200.0		50.3	15	87	0	0	
Surr: Phenol-d5	76		200.0		38.2	15	67.5	0	0	
Surr: 2,4,6-Tribromophenol	130		200.0		63.0	15	122	0	0	
Surr: Nitrobenzene-d5	65		100.0		64.9	15	103	0	0	
Surr: 2-Fluorobiphenyl	64		100.0		64.1	15	103	0	0	
Surr: 4-Terphenyl-d14	110		100.0		105	45	137	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb-64693** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64693** RunNo: **84979**
Prep Date: **12/22/2021** Analysis Date: **1/5/2022** SeqNo: **2989841** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Surr: Nitrobenzene-d5	1.9		4.000		48.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	3.3		8.000		41.5	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.7		4.000		43.5	15	84.5			
Surr: 4-Terphenyl-d14	4.0		4.000		101	73.1	152			

Sample ID: **lcs-64693** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64693** RunNo: **84979**
Prep Date: **12/22/2021** Analysis Date: **1/5/2022** SeqNo: **2989842** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.72	0.10	2.000	0	36.0	15	79.8			
Naphthalene	0.74	0.10	2.000	0	37.0	26.5	90.9			
1-Methylnaphthalene	0.74	0.10	2.000	0	37.0	27.9	88.2			
2-Methylnaphthalene	0.70	0.10	2.000	0	35.0	29.2	87.5			
Acenaphthene	1.0	0.10	2.000	0	51.0	25.6	93.9			
Fluorene	1.3	0.10	2.000	0	63.0	27.4	95.1			
Phenanthrene	1.6	0.10	2.000	0	78.0	25.1	104			
Anthracene	1.5	0.10	2.000	0	75.0	30.1	100			
Pyrene	1.7	0.20	2.000	0	84.0	34.5	112			
Benz(a)anthracene	2.0	0.10	2.000	0	101	43.9	132			
Chrysene	1.8	0.10	2.000	0	91.0	39.8	118			
Surr: Nitrobenzene-d5	3.4		5.000		68.4	21.9	89.8			
Surr: 2,4,6-Tribromophenol	6.4		10.00		64.2	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.9		5.000		57.6	15	84.5			
Surr: 4-Terphenyl-d14	5.4		5.000		109	73.1	152			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb-64618** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64618** RunNo: **85004**
Prep Date: **12/20/2021** Analysis Date: **1/7/2022** SeqNo: **2990676** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	2.8		4.000		69.0	21.9	89.8			
Surr: 2,4,6-Tribromophenol	5.0		8.000		62.3	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.3		4.000		56.5	15	84.5			
Surr: 4-Terphenyl-d14	4.7		4.000		118	73.1	152			

Sample ID: **lcs-64618** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64618** RunNo: **85004**
Prep Date: **12/20/2021** Analysis Date: **1/7/2022** SeqNo: **2990677** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.8		5.000		75.6	21.9	89.8			
Surr: 2,4,6-Tribromophenol	7.0		10.00		69.8	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.9		5.000		58.8	15	84.5			
Surr: 4-Terphenyl-d14	5.7		5.000		114	73.1	152			

Sample ID: **lcsd-64618** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **64618** RunNo: **85004**
Prep Date: **12/20/2021** Analysis Date: **1/7/2022** SeqNo: **2990678** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	4.2		5.000		83.2	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	8.2		10.00		81.6	23.4	71.6	0	0	S
Surr: 2-Fluorobiphenyl	3.2		5.000		64.8	15	84.5	0	0	
Surr: 4-Terphenyl-d14	6.9		5.000		139	73.1	152	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2112C34**

26-Jan-22

Client: Marathon

Project: 2021 GW Sampling 4th Quarter

Sample ID: **2.5ng gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSW** Batch ID: **G84831** RunNo: **84831**

Prep Date: Analysis Date: **12/28/2021** SeqNo: **2983936** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.5	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			

Sample ID: **2112c34-002ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **MKTF-17R** Batch ID: **G84831** RunNo: **84831**

Prep Date: Analysis Date: **12/28/2021** SeqNo: **2983939** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	34	0.50	5.000	27.62	124	70	130			
Surr: 4-Bromofluorobenzene	93		100.0		93.5	70	130			

Sample ID: **2112c34-002amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **MKTF-17R** Batch ID: **G84831** RunNo: **84831**

Prep Date: Analysis Date: **12/28/2021** SeqNo: **2983940** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	32	0.50	5.000	27.62	93.8	70	130	4.58	20	
Surr: 4-Bromofluorobenzene	95		100.0		95.0	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBW** Batch ID: **G84831** RunNo: **84831**

Prep Date: Analysis Date: **12/28/2021** SeqNo: **2983955** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		112	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2112C34** RcptNo: 1

Received By: **Tracy Casarrubias** **12/21/2021 3:09:00 PM**

Completed By: **Desiree Dominguez** **12/21/2021 3:11:18 PM** DD

Reviewed By: KRG 12/21/21

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 18 (<2 or >12 unless noted)
Adjusted? NO
Checked by: TMC 12/21/21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks: Did not receive 504.1 vials for samples 001B, 002B, 003B, 005B, 007B
DAD 12/21/21

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	6.5	Good				
2	6.9	Good				
3	7.0	Good				

Released to Imaging: 4/11/2022 10:33:55 AM

Received by OCD: 3/25/2022 3:35:30 PM

Chain-of-Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown NM,87301

Phone #: 808-640-1823

email or Fax#:

QA/QC Package:
X Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ Az Compliance
☐ NELAC ☐ Other

EDD (Type)

X Standard Rush

Project Name:
2021 GW Sampling 4th Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Brian McLoughlin

Sampler:

On Ice: X Yes ☐ No

# of Coolers: 3

Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2112C34	See Analyte List	VOC	TPH GRO	TPH DRO/MRO	SVOC	1,4 Dioxane	WQCC METALS	cations/anions	nitrate/nitrate	8011 EDB	COD	Cyanide	TDS/TSS	General Chemistry	PFAS
12-21-21	8:35		EB-12-21-21	12		-001	X	X	X	X	X		X	X	X						
12-21-21	9:00		MKTE-17R	12		-002	X	X	X	X	X		X	X	X						
12-21-21	~~9:45~~		MKTE-18R	12		-003	X	X	X	X	X		X	X	X						
12-21-21	10:15		MKTE-35	14		-004	X	X	X	X	X		X	X	X	X					
12-21-21	10:35		MKTE-38	12		-005	X	X	X	X	X		X	X	X						
12-21-21	10:35		FB-12-21-21	2		-006	X	X	X	X	X		X	X	X						
12-21-21	=		DUP-12-21-21	12		-007	X	X	X	X	X		X	X	X						
12-17-21	3:30		FB-12-17-21	2		-008	X	X													
			Trip Blank			-009		X								X					
			DAD 12.21.21																		

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
12-21-21	13:30	Hilario Tejada		Courier	12/21/21	15:09
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

cooler 1.) 6.8 - 0.3 = 6.5
cooler 2.) 7.2 - 0.3 = 6.9
cooler 3.) 7.3 - 0.3 = 7.0

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

January 18, 2022

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL:
FAX

RE: 2021 GW Sampling 4th Quarter OrderNo.: 2112D00

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 7 sample(s) on 12/22/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
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Case Narrative

WO#: **2112D00**
Date: **1/18/2022**

CLIENT: Marathon
Project: 2021 GW Sampling 4th Quarter

Analytical Notes Regarding EPA Method 8270:
Pyridine is reported with an "E" flag. The "E" flag is used to represent an estimated value. Pyridine was not detected in the sample, but the calibration curve for this compound did not meet the method requirements.

"S" flags denote that the sample surrogate or spike result is outside of the acceptable limits due to sample dilution or matrix interferences.

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:30:00 AM
Lab ID: 2112D00-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
Toluene	ND	0.20	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
Naphthalene	ND	0.50	2.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
Acetone	3.7	2.5	10	J	µg/L	1	12/29/2021 4:57:50 AM	R84831
Bromomethane	ND	0.85	3.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
2-Butanone	ND	2.0	10		µg/L	1	12/29/2021 4:57:50 AM	R84831
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
Chloroethane	ND	0.38	2.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
Chloroform	ND	0.13	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
Chloromethane	ND	0.41	3.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
2-Hexanone	ND	1.8	10		µg/L	1	12/29/2021 4:57:50 AM	R84831
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/29/2021 4:57:50 AM	R84831
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
Styrene	ND	0.14	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/29/2021 4:57:50 AM	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:30:00 AM
Lab ID: 2112D00-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/29/2021 4:57:50 AM	R84831
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	12/29/2021 4:57:50 AM	R84831
Surr: 4-Bromofluorobenzene	97.0	0	70-130		%Rec	1	12/29/2021 4:57:50 AM	R84831
Surr: Dibromofluoromethane	98.6	0	70-130		%Rec	1	12/29/2021 4:57:50 AM	R84831
Surr: Toluene-d8	101	0	70-130		%Rec	1	12/29/2021 4:57:50 AM	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/29/2021 4:57:50 AM	G84831
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	12/29/2021 4:57:50 AM	G84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:30:00 AM
Lab ID: 2112D00-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.017	0.016	0.064	J	mg/L	1	12/28/2021 5:16:48 PM	64709
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 5:16:48 PM	64709
Surr: DNOP	109	0	15-142		%Rec	1	12/28/2021 5:16:48 PM	64709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:30:00 AM
Lab ID: 2112D00-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/7/2022 4:35:03 AM	64740
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 4:35:03 AM	64740
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/7/2022 4:35:03 AM	64740
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 4:35:03 AM	64740
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/7/2022 4:35:03 AM	64740
Carbazole	ND	0.56	5.0		µg/L	1	1/7/2022 4:35:03 AM	64740
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 4:35:03 AM	64740
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/7/2022 4:35:03 AM	64740
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/7/2022 4:35:03 AM	64740
Diethyl phthalate	ND	3.9	10		µg/L	1	1/7/2022 4:35:03 AM	64740
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 4:35:03 AM	64740
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/7/2022 4:35:03 AM	64740
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/7/2022 4:35:03 AM	64740
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/7/2022 4:35:03 AM	64740
Phenol	ND	0.33	5.0		µg/L	1	1/7/2022 4:35:03 AM	64740
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/7/2022 4:35:03 AM	64740
Surr: 2-Fluorophenol	64.2	0	15-87		%Rec	1	1/7/2022 4:35:03 AM	64740
Surr: Phenol-d5	47.2	0	15-67.5		%Rec	1	1/7/2022 4:35:03 AM	64740
Surr: 2,4,6-Tribromophenol	89.5	0	15-122		%Rec	1	1/7/2022 4:35:03 AM	64740
Surr: Nitrobenzene-d5	74.7	0	15-103		%Rec	1	1/7/2022 4:35:03 AM	64740
Surr: 2-Fluorobiphenyl	82.3	0	15-103		%Rec	1	1/7/2022 4:35:03 AM	64740
Surr: 4-Terphenyl-d14	123	0	45-137		%Rec	1	1/7/2022 4:35:03 AM	64740
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	12/30/2021 1:12:00 PM	64771
Naphthalene	ND	0.034	0.10		µg/L	1	12/30/2021 1:12:00 PM	64771
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	12/30/2021 1:12:00 PM	64771
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	12/30/2021 1:12:00 PM	64771
Acenaphthene	ND	0.031	0.10		µg/L	1	12/30/2021 1:12:00 PM	64771
Fluorene	ND	0.031	0.10		µg/L	1	12/30/2021 1:12:00 PM	64771
Phenanthrene	ND	0.057	0.10		µg/L	1	12/30/2021 1:12:00 PM	64771
Anthracene	ND	0.034	0.10		µg/L	1	12/30/2021 1:12:00 PM	64771
Pyrene	ND	0.16	0.20		µg/L	1	12/30/2021 1:12:00 PM	64771
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	12/30/2021 1:12:00 PM	64771
Chrysene	ND	0.024	0.10		µg/L	1	12/30/2021 1:12:00 PM	64771
Surr: Nitrobenzene-d5	72.5	0	21.9-89.8		%Rec	1	12/30/2021 1:12:00 PM	64771
Surr: 2-Fluorobiphenyl	64.0	0	15-84.5		%Rec	1	12/30/2021 1:12:00 PM	64771
Surr: 4-Terphenyl-d14	106	0	73.1-152		%Rec	1	12/30/2021 1:12:00 PM	64771

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:30:00 AM
Lab ID: 2112D00-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	ND	0.20	0.50		mg/L	5	12/23/2021 1:07:59 PM	R84789
Chloride	ND	1.2	2.5		mg/L	5	12/23/2021 1:07:59 PM	R84789
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	12/23/2021 1:07:59 PM	R84789
Nitrogen, Nitrate (As N)	0.066	0.050	0.50	J	mg/L	5	12/23/2021 1:07:59 PM	R84789
Sulfate	ND	1.2	2.5		mg/L	5	12/23/2021 1:07:59 PM	R84789

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:30:00 AM
Lab ID: 2112D00-001F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	12/29/2021 11:07:35 A	64744
Cadmium	ND	0.0015	0.0020		mg/L	1	12/29/2021 11:07:35 A	64744
Chromium	ND	0.0021	0.0060		mg/L	1	12/29/2021 11:07:35 A	64744
Iron	ND	0.013	0.050		mg/L	1	12/29/2021 11:07:35 A	64744
Manganese	ND	0.00081	0.0020		mg/L	1	12/29/2021 11:07:35 A	64744
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 11:07:35 A	64744
Zinc	ND	0.0064	0.010		mg/L	1	12/29/2021 11:07:35 A	64744
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	ND	0.00013	0.0010		mg/L	1	12/29/2021 12:52:26 P	64744
Copper	ND	0.00040	0.0010		mg/L	1	12/29/2021 12:52:26 P	64744
Lead	ND	0.000061	0.00050		mg/L	1	12/29/2021 12:52:26 P	64744
Selenium	ND	0.00037	0.0010		mg/L	1	12/29/2021 12:52:26 P	64744
Uranium	ND	0.000069	0.00050		mg/L	1	12/29/2021 12:52:26 P	64744
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:24:40 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:30:00 AM
Lab ID: 2112D00-001G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	12/29/2021 12:25:53 P	A84839
Cadmium	ND	0.00098	0.0020		mg/L	1	12/29/2021 12:25:53 P	A84839
Chromium	ND	0.0020	0.0060		mg/L	1	12/29/2021 12:25:53 P	A84839
Iron	ND	0.010	0.020		mg/L	1	12/29/2021 12:25:53 P	A84839
Manganese	ND	0.00058	0.0020		mg/L	1	12/29/2021 12:25:53 P	A84839
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 12:25:53 P	A84839
Zinc	0.0078	0.0032	0.010	J	mg/L	1	12/29/2021 12:25:53 P	A84839
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	ND	0.00012	0.0010		mg/L	1	12/30/2021 3:58:13 PM	A84886
Copper	ND	0.00037	0.0010		mg/L	1	12/30/2021 3:58:13 PM	A84886
Lead	ND	0.000057	0.00050		mg/L	1	12/30/2021 3:58:13 PM	A84886
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 3:58:13 PM	A84886
Uranium	ND	0.000065	0.00050		mg/L	1	12/30/2021 3:58:13 PM	A84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:26:50 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-04R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:45:00 AM
Lab ID: 2112D00-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	190	1.1	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
Toluene	2.9	1.0	5.0	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
Ethylbenzene	33	1.1	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
Methyl tert-butyl ether (MTBE)	860	2.0	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
1,2,4-Trimethylbenzene	39	0.61	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
1,3,5-Trimethylbenzene	4.3	0.91	5.0	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
1,2-Dichloroethane (EDC)	2.7	1.3	5.0	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
1,2-Dibromoethane (EDB)	ND	1.5	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
Naphthalene	19	2.5	10		µg/L	5	12/29/2021 5:54:46 AM	R84831
1-Methylnaphthalene	13	4.2	20	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
2-Methylnaphthalene	6.6	3.5	20	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
Acetone	ND	13	50		µg/L	5	12/29/2021 5:54:46 AM	R84831
Bromomethane	ND	4.3	15		µg/L	5	12/29/2021 5:54:46 AM	R84831
2-Butanone	ND	10	50		µg/L	5	12/29/2021 5:54:46 AM	R84831
Chlorobenzene	ND	0.78	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
Chloroethane	ND	1.9	10		µg/L	5	12/29/2021 5:54:46 AM	R84831
Chloroform	1.5	0.67	5.0	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
Chloromethane	2.9	2.1	15	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
cis-1,2-DCE	26	1.9	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
1,2-Dichlorobenzene	ND	0.77	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
1,4-Dichlorobenzene	ND	1.0	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
1,1-Dichloroethane	54	1.4	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
1,1-Dichloroethene	81	1.0	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
1,2-Dichloropropane	1.7	1.0	5.0	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
2-Hexanone	ND	9.0	50		µg/L	5	12/29/2021 5:54:46 AM	R84831
Isopropylbenzene	2.4	0.91	5.0	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
4-Isopropyltoluene	1.2	1.0	5.0	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
4-Methyl-2-pentanone	ND	4.4	50		µg/L	5	12/29/2021 5:54:46 AM	R84831
Methylene Chloride	ND	2.5	15		µg/L	5	12/29/2021 5:54:46 AM	R84831
n-Butylbenzene	1.4	1.3	15	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
n-Propylbenzene	3.2	0.91	5.0	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
sec-Butylbenzene	1.4	0.72	5.0	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
Styrene	ND	0.68	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
tert-Butylbenzene	ND	1.2	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
1,2,4-Trichlorobenzene	ND	1.2	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
1,1,2-Trichloroethane	ND	0.99	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831
Trichloroethene (TCE)	3.3	1.0	5.0	J	µg/L	5	12/29/2021 5:54:46 AM	R84831
Vinyl chloride	ND	1.6	5.0		µg/L	5	12/29/2021 5:54:46 AM	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-04R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:45:00 AM
Lab ID: 2112D00-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	52	1.9	7.5		µg/L	5	12/29/2021 5:54:46 AM	R84831
Surr: 1,2-Dichloroethane-d4	96.9	0	70-130		%Rec	5	12/29/2021 5:54:46 AM	R84831
Surr: 4-Bromofluorobenzene	90.1	0	70-130		%Rec	5	12/29/2021 5:54:46 AM	R84831
Surr: Dibromofluoromethane	91.0	0	70-130		%Rec	5	12/29/2021 5:54:46 AM	R84831
Surr: Toluene-d8	102	0	70-130		%Rec	5	12/29/2021 5:54:46 AM	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	2.1	0.061	0.25		mg/L	5	12/29/2021 5:54:46 AM	G84831
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	5	12/29/2021 5:54:46 AM	G84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-04R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:45:00 AM
Lab ID: 2112D00-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.2	0.016	0.064		mg/L	1	12/28/2021 5:40:28 PM	64709
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 5:40:28 PM	64709
Surr: DNOP	94.0	0	15-142		%Rec	1	12/28/2021 5:40:28 PM	64709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-04R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:45:00 AM
Lab ID: 2112D00-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/7/2022 5:16:27 AM	64740
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 5:16:27 AM	64740
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/7/2022 5:16:27 AM	64740
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 5:16:27 AM	64740
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/7/2022 5:16:27 AM	64740
Carbazole	ND	0.56	5.0		µg/L	1	1/7/2022 5:16:27 AM	64740
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 5:16:27 AM	64740
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/7/2022 5:16:27 AM	64740
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/7/2022 5:16:27 AM	64740
Diethyl phthalate	ND	3.9	10		µg/L	1	1/7/2022 5:16:27 AM	64740
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 5:16:27 AM	64740
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/7/2022 5:16:27 AM	64740
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/7/2022 5:16:27 AM	64740
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/7/2022 5:16:27 AM	64740
Phenol	1.5	0.33	5.0	J	µg/L	1	1/7/2022 5:16:27 AM	64740
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/7/2022 5:16:27 AM	64740
Surr: 2-Fluorophenol	62.7	0	15-87		%Rec	1	1/7/2022 5:16:27 AM	64740
Surr: Phenol-d5	48.8	0	15-67.5		%Rec	1	1/7/2022 5:16:27 AM	64740
Surr: 2,4,6-Tribromophenol	104	0	15-122		%Rec	1	1/7/2022 5:16:27 AM	64740
Surr: Nitrobenzene-d5	74.6	0	15-103		%Rec	1	1/7/2022 5:16:27 AM	64740
Surr: 2-Fluorobiphenyl	79.6	0	15-103		%Rec	1	1/7/2022 5:16:27 AM	64740
Surr: 4-Terphenyl-d14	115	0	45-137		%Rec	1	1/7/2022 5:16:27 AM	64740
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	23	0.48	10		µg/L	10	1/5/2022 1:29:00 PM	64771
Naphthalene	12	0.034	0.10		µg/L	1	12/30/2021 1:57:00 PM	64771
1-Methylnaphthalene	10	0.024	0.10		µg/L	1	12/30/2021 1:57:00 PM	64771
2-Methylnaphthalene	6.0	0.034	0.10		µg/L	1	12/30/2021 1:57:00 PM	64771
Acenaphthene	1.1	0.031	0.10		µg/L	1	12/30/2021 1:57:00 PM	64771
Fluorene	1.4	0.031	0.10		µg/L	1	12/30/2021 1:57:00 PM	64771
Phenanthrene	1.2	0.057	0.10		µg/L	1	12/30/2021 1:57:00 PM	64771
Anthracene	0.44	0.034	0.10		µg/L	1	12/30/2021 1:57:00 PM	64771
Pyrene	0.26	0.16	0.20		µg/L	1	12/30/2021 1:57:00 PM	64771
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	12/30/2021 1:57:00 PM	64771
Chrysene	ND	0.024	0.10		µg/L	1	12/30/2021 1:57:00 PM	64771
Surr: Nitrobenzene-d5	78.0	0	21.9-89.8		%Rec	1	12/30/2021 1:57:00 PM	64771
Surr: 2-Fluorobiphenyl	64.0	0	15-84.5		%Rec	1	12/30/2021 1:57:00 PM	64771
Surr: 4-Terphenyl-d14	108	0	73.1-152		%Rec	1	12/30/2021 1:57:00 PM	64771

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-04R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:45:00 AM
Lab ID: 2112D00-002E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	0.29	0.20	0.50	J	mg/L	5	12/23/2021 1:33:44 PM	R84789
Chloride	240	5.0	10		mg/L	20	12/23/2021 1:46:37 PM	R84789
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	12/23/2021 1:33:44 PM	R84789
Nitrogen, Nitrate (As N)	0.066	0.050	0.50	J	mg/L	5	12/23/2021 1:33:44 PM	R84789
Sulfate	92	1.2	2.5		mg/L	5	12/23/2021 1:33:44 PM	R84789

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-04R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:45:00 AM
Lab ID: 2112D00-002F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.60	0.0016	0.0030		mg/L	1	12/29/2021 11:09:00 A	64744
Cadmium	ND	0.0015	0.0020		mg/L	1	12/29/2021 11:09:00 A	64744
Chromium	ND	0.0021	0.0060		mg/L	1	12/29/2021 11:09:00 A	64744
Iron	2.2	0.064	0.25	*	mg/L	5	12/29/2021 11:10:11 A	64744
Manganese	2.6	0.0041	0.010	*	mg/L	5	12/29/2021 11:10:11 A	64744
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 11:09:00 A	64744
Zinc	0.030	0.0064	0.010		mg/L	1	12/29/2021 11:09:00 A	64744
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0029	0.00013	0.0010		mg/L	1	12/29/2021 12:54:53 P	64744
Copper	0.0027	0.00040	0.0010		mg/L	1	12/29/2021 12:54:53 P	64744
Lead	0.0017	0.000061	0.00050		mg/L	1	12/29/2021 12:54:53 P	64744
Selenium	ND	0.00037	0.0010		mg/L	1	12/29/2021 12:54:53 P	64744
Uranium	0.024	0.000069	0.00050		mg/L	1	12/29/2021 12:54:53 P	64744
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:29:02 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-04R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 8:45:00 AM
Lab ID: 2112D00-002G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.55	0.0011	0.0020		mg/L	1	12/29/2021 12:27:29 P	A84839
Cadmium	ND	0.00098	0.0020		mg/L	1	12/29/2021 12:27:29 P	A84839
Chromium	ND	0.0020	0.0060		mg/L	1	12/29/2021 12:27:29 P	A84839
Iron	0.49	0.010	0.020	*	mg/L	1	12/29/2021 12:27:29 P	A84839
Manganese	2.5	0.0029	0.010	*	mg/L	5	12/29/2021 12:28:55 P	A84839
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 12:27:29 P	A84839
Zinc	0.075	0.0032	0.010		mg/L	1	12/29/2021 12:27:29 P	A84839
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0019	0.00012	0.0010		mg/L	1	12/30/2021 4:00:55 PM	A84886
Copper	0.00063	0.00037	0.0010	J	mg/L	1	12/30/2021 4:00:55 PM	A84886
Lead	ND	0.000057	0.00050		mg/L	1	12/30/2021 4:00:55 PM	A84886
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 4:00:55 PM	A84886
Uranium	0.021	0.000065	0.00050		mg/L	1	12/30/2021 4:00:55 PM	A84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:31:13 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-01R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 9:20:00 AM
Lab ID: 2112D00-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	6800	23	100		µg/L	100	12/29/2021 6:23:16 AM	R84831
Toluene	250	2.0	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
Ethylbenzene	670	2.1	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
Methyl tert-butyl ether (MTBE)	90	3.9	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
1,2,4-Trimethylbenzene	410	1.2	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
1,3,5-Trimethylbenzene	11	1.8	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
1,2-Dichloroethane (EDC)	4.7	2.5	10	J	µg/L	10	12/29/2021 6:51:46 AM	R84831
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
Naphthalene	65	5.0	20		µg/L	10	12/29/2021 6:51:46 AM	R84831
1-Methylnaphthalene	31	8.4	40	J	µg/L	10	12/29/2021 6:51:46 AM	R84831
2-Methylnaphthalene	22	6.9	40	J	µg/L	10	12/29/2021 6:51:46 AM	R84831
Acetone	ND	25	100		µg/L	10	12/29/2021 6:51:46 AM	R84831
Bromomethane	ND	8.5	30		µg/L	10	12/29/2021 6:51:46 AM	R84831
2-Butanone	ND	20	100		µg/L	10	12/29/2021 6:51:46 AM	R84831
Chlorobenzene	ND	1.6	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
Chloroethane	ND	3.8	20		µg/L	10	12/29/2021 6:51:46 AM	R84831
Chloroform	ND	1.3	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
Chloromethane	ND	4.1	30		µg/L	10	12/29/2021 6:51:46 AM	R84831
cis-1,2-DCE	ND	3.9	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
1,1-Dichloroethane	4.9	2.7	10	J	µg/L	10	12/29/2021 6:51:46 AM	R84831
1,1-Dichloroethene	ND	2.0	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
1,2-Dichloropropane	ND	2.0	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
2-Hexanone	ND	18	100		µg/L	10	12/29/2021 6:51:46 AM	R84831
Isopropylbenzene	35	1.8	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
4-Isopropyltoluene	3.9	2.0	10	J	µg/L	10	12/29/2021 6:51:46 AM	R84831
4-Methyl-2-pentanone	ND	8.8	100		µg/L	10	12/29/2021 6:51:46 AM	R84831
Methylene Chloride	ND	5.0	30		µg/L	10	12/29/2021 6:51:46 AM	R84831
n-Butylbenzene	14	2.5	30	J	µg/L	10	12/29/2021 6:51:46 AM	R84831
n-Propylbenzene	81	1.8	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
sec-Butylbenzene	7.5	1.4	10	J	µg/L	10	12/29/2021 6:51:46 AM	R84831
Styrene	1.7	1.4	10	J	µg/L	10	12/29/2021 6:51:46 AM	R84831
tert-Butylbenzene	ND	2.4	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
1,1,2-Trichloroethane	ND	2.0	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	12/29/2021 6:51:46 AM	R84831
Vinyl chloride	34	3.2	10		µg/L	10	12/29/2021 6:51:46 AM	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-01R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 9:20:00 AM
Lab ID: 2112D00-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	1000	3.7	15		µg/L	10	12/29/2021 6:51:46 AM	R84831
Surr: 1,2-Dichloroethane-d4	90.5	0	70-130		%Rec	10	12/29/2021 6:51:46 AM	R84831
Surr: 4-Bromofluorobenzene	81.2	0	70-130		%Rec	10	12/29/2021 6:51:46 AM	R84831
Surr: Dibromofluoromethane	86.6	0	70-130		%Rec	10	12/29/2021 6:51:46 AM	R84831
Surr: Toluene-d8	105	0	70-130		%Rec	10	12/29/2021 6:51:46 AM	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	23	0.12	0.50		mg/L	10	12/29/2021 6:51:46 AM	G84831
Surr: 4-Bromofluorobenzene	94.1	0	70-130		%Rec	10	12/29/2021 6:51:46 AM	G84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-01R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 9:20:00 AM
Lab ID: 2112D00-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.4	0.016	0.064		mg/L	1	12/28/2021 6:04:05 PM	64709
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 6:04:05 PM	64709
Surr: DNOP	103	0	15-142		%Rec	1	12/28/2021 6:04:05 PM	64709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-01R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 9:20:00 AM
Lab ID: 2112D00-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/7/2022 5:57:32 AM	64740
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 5:57:32 AM	64740
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/7/2022 5:57:32 AM	64740
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 5:57:32 AM	64740
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/7/2022 5:57:32 AM	64740
Carbazole	ND	0.56	5.0		µg/L	1	1/7/2022 5:57:32 AM	64740
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 5:57:32 AM	64740
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/7/2022 5:57:32 AM	64740
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/7/2022 5:57:32 AM	64740
Diethyl phthalate	ND	3.9	10		µg/L	1	1/7/2022 5:57:32 AM	64740
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 5:57:32 AM	64740
2,4-Dimethylphenol	2.6	0.97	5.0	J	µg/L	1	1/7/2022 5:57:32 AM	64740
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/7/2022 5:57:32 AM	64740
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/7/2022 5:57:32 AM	64740
Phenol	34	0.33	5.0		µg/L	1	1/7/2022 5:57:32 AM	64740
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/7/2022 5:57:32 AM	64740
Surr: 2-Fluorophenol	0	0	15-87	S	%Rec	1	1/7/2022 5:57:32 AM	64740
Surr: Phenol-d5	47.3	0	15-67.5		%Rec	1	1/7/2022 5:57:32 AM	64740
Surr: 2,4,6-Tribromophenol	77.0	0	15-122		%Rec	1	1/7/2022 5:57:32 AM	64740
Surr: Nitrobenzene-d5	71.6	0	15-103		%Rec	1	1/7/2022 5:57:32 AM	64740
Surr: 2-Fluorobiphenyl	75.3	0	15-103		%Rec	1	1/7/2022 5:57:32 AM	64740
Surr: 4-Terphenyl-d14	116	0	45-137		%Rec	1	1/7/2022 5:57:32 AM	64740
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	11	0.34	1.0		µg/L	10	1/5/2022 2:15:00 PM	64771
1-Methylnaphthalene	18	0.024	0.10		µg/L	1	12/30/2021 2:41:00 PM	64771
2-Methylnaphthalene	14	0.034	0.10		µg/L	1	12/30/2021 2:41:00 PM	64771
Acenaphthene	0.54	0.031	0.10		µg/L	1	12/30/2021 2:41:00 PM	64771
Fluorene	0.82	0.031	0.10		µg/L	1	12/30/2021 2:41:00 PM	64771
Phenanthrene	0.36	0.057	0.10		µg/L	1	12/30/2021 2:41:00 PM	64771
Anthracene	ND	0.034	0.10		µg/L	1	12/30/2021 2:41:00 PM	64771
Pyrene	ND	0.16	0.20		µg/L	1	12/30/2021 2:41:00 PM	64771
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	12/30/2021 2:41:00 PM	64771
Chrysene	ND	0.024	0.10		µg/L	1	12/30/2021 2:41:00 PM	64771
Surr: Nitrobenzene-d5	6.50	0	21.9-89.8	S	%Rec	1	12/30/2021 2:41:00 PM	64771
Surr: 2-Fluorobiphenyl	58.0	0	15-84.5		%Rec	1	12/30/2021 2:41:00 PM	64771
Surr: 4-Terphenyl-d14	92.0	0	73.1-152		%Rec	1	12/30/2021 2:41:00 PM	64771

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-01R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 9:20:00 AM
Lab ID: 2112D00-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	0.45	0.20	0.50	J	mg/L	5	12/23/2021 1:59:28 PM	R84789
Chloride	1000	25	50	*	mg/L	100	1/8/2022 3:08:26 PM	R85040
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	12/23/2021 1:59:28 PM	R84789
Nitrogen, Nitrate (As N)	ND	0.050	0.50		mg/L	5	12/23/2021 1:59:28 PM	R84789
Sulfate	ND	1.2	2.5		mg/L	5	12/23/2021 1:59:28 PM	R84789

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-01R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 9:20:00 AM
Lab ID: 2112D00-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	5.7	0.016	0.030	*	mg/L	10	12/29/2021 11:59:26 A	64744
Cadmium	ND	0.0015	0.0020		mg/L	1	12/29/2021 11:16:45 A	64744
Chromium	ND	0.0021	0.0060		mg/L	1	12/29/2021 11:16:45 A	64744
Iron	9.1	0.13	0.50	*	mg/L	10	12/29/2021 11:59:26 A	64744
Manganese	3.2	0.0041	0.010	*	mg/L	5	12/29/2021 11:18:11 A	64744
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 11:16:45 A	64744
Zinc	ND	0.0064	0.010		mg/L	1	12/29/2021 11:16:45 A	64744
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0067	0.00013	0.0010		mg/L	1	12/29/2021 12:57:20 P	64744
Copper	0.00080	0.00040	0.0010	J	mg/L	1	12/29/2021 12:57:20 P	64744
Lead	0.0010	0.00031	0.0025	J	mg/L	5	12/29/2021 1:48:40 PM	64744
Selenium	0.00040	0.00037	0.0010	J	mg/L	1	12/29/2021 12:57:20 P	64744
Uranium	0.0017	0.00034	0.0025	J	mg/L	5	1/5/2022 3:31:50 PM	64744
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:33:24 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-01R
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 9:20:00 AM
Lab ID: 2112D00-003G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	5.5	0.011	0.020	*	mg/L	10	12/29/2021 12:40:13 P	A84839
Cadmium	ND	0.00098	0.0020		mg/L	1	12/29/2021 12:38:47 P	A84839
Chromium	ND	0.0020	0.0060		mg/L	1	12/29/2021 12:38:47 P	A84839
Iron	8.2	0.10	0.20	*	mg/L	10	12/29/2021 12:40:13 P	A84839
Manganese	3.1	0.0058	0.020	*	mg/L	10	12/29/2021 12:40:13 P	A84839
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 12:38:47 P	A84839
Zinc	0.0088	0.0032	0.010	J	mg/L	1	12/29/2021 12:38:47 P	A84839
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0058	0.00012	0.0010		mg/L	1	12/30/2021 4:03:36 PM	A84886
Copper	ND	0.00037	0.0010		mg/L	1	12/30/2021 4:03:36 PM	A84886
Lead	0.000059	0.000057	0.00050	J	mg/L	1	12/30/2021 4:03:36 PM	A84886
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 4:03:36 PM	A84886
Uranium	0.0020	0.000065	0.00050		mg/L	1	12/30/2021 4:03:36 PM	A84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:35:37 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NDD-MW-1
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 9:40:00 AM
Lab ID: 2112D00-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	10	0.23	1.0		µg/L	1	12/29/2021 7:20:22 AM	R84831
Toluene	0.33	0.20	1.0	J	µg/L	1	12/29/2021 7:20:22 AM	R84831
Ethylbenzene	0.29	0.21	1.0	J	µg/L	1	12/29/2021 7:20:22 AM	R84831
Methyl tert-butyl ether (MTBE)	63	0.39	1.0		µg/L	1	12/29/2021 7:20:22 AM	R84831
1,2,4-Trimethylbenzene	0.90	0.12	1.0	J	µg/L	1	12/29/2021 7:20:22 AM	R84831
1,3,5-Trimethylbenzene	0.39	0.18	1.0	J	µg/L	1	12/29/2021 7:20:22 AM	R84831
1,2-Dichloroethane (EDC)	15	0.25	1.0		µg/L	1	12/29/2021 7:20:22 AM	R84831
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	12/29/2021 7:20:22 AM	R84831
Naphthalene	0.64	0.50	2.0	J	µg/L	1	12/29/2021 7:20:22 AM	R84831
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/29/2021 7:20:22 AM	R84831
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/29/2021 7:20:22 AM	R84831
Acetone	5.0	2.5	10	J	µg/L	1	12/29/2021 7:20:22 AM	R84831
2-Butanone	ND	2.0	10		µg/L	1	12/29/2021 7:20:22 AM	R84831
Chloroethane	ND	0.38	2.0		µg/L	1	12/29/2021 7:20:22 AM	R84831
1,1-Dichloroethane	0.85	0.27	1.0	J	µg/L	1	12/29/2021 7:20:22 AM	R84831
Isopropylbenzene	25	0.18	1.0		µg/L	1	12/29/2021 7:20:22 AM	R84831
4-Isopropyltoluene	0.22	0.20	1.0	J	µg/L	1	12/29/2021 7:20:22 AM	R84831
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/29/2021 7:20:22 AM	R84831
n-Butylbenzene	1.0	0.25	3.0	J	µg/L	1	12/29/2021 7:20:22 AM	R84831
n-Propylbenzene	1.6	0.18	1.0		µg/L	1	12/29/2021 7:20:22 AM	R84831
sec-Butylbenzene	5.2	0.14	1.0		µg/L	1	12/29/2021 7:20:22 AM	R84831
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/29/2021 7:20:22 AM	R84831
Xylenes, Total	2.8	0.37	1.5		µg/L	1	12/29/2021 7:20:22 AM	R84831
Surr: 1,2-Dichloroethane-d4	98.1	0	70-130		%Rec	1	12/29/2021 7:20:22 AM	R84831
Surr: 4-Bromofluorobenzene	89.8	0	70-130		%Rec	1	12/29/2021 7:20:22 AM	R84831
Surr: Dibromofluoromethane	91.3	0	70-130		%Rec	1	12/29/2021 7:20:22 AM	R84831
Surr: Toluene-d8	105	0	70-130		%Rec	1	12/29/2021 7:20:22 AM	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.65	0.012	0.050		mg/L	1	12/29/2021 7:20:22 AM	G84831
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	12/29/2021 7:20:22 AM	G84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NDD-MW-1
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 9:40:00 AM
Lab ID: 2112D00-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.2	0.016	0.064		mg/L	1	12/28/2021 6:27:37 PM	64709
Motor Oil Range Organics (MRO)	0.061	0.052	0.080	J	mg/L	1	12/28/2021 6:27:37 PM	64709
Surr: DNOP	99.1	0	15-142		%Rec	1	12/28/2021 6:27:37 PM	64709

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Collection Date: 12/22/2021 9:40:00 AM
Lab ID: 2112D00-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 6:38:23 AM	64740
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 6:38:23 AM	64740
Carbazole	0.76	0.56	5.0	J	µg/L	1	1/7/2022 6:38:23 AM	64740
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 6:38:23 AM	64740
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/7/2022 6:38:23 AM	64740
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 6:38:23 AM	64740
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/7/2022 6:38:23 AM	64740
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/7/2022 6:38:23 AM	64740
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/7/2022 6:38:23 AM	64740
Phenol	ND	0.33	5.0		µg/L	1	1/7/2022 6:38:23 AM	64740
Surr: 2-Fluorophenol	68.1	0	15-87		%Rec	1	1/7/2022 6:38:23 AM	64740
Surr: Phenol-d5	52.0	0	15-67.5		%Rec	1	1/7/2022 6:38:23 AM	64740
Surr: 2,4,6-Tribromophenol	94.8	0	15-122		%Rec	1	1/7/2022 6:38:23 AM	64740
Surr: Nitrobenzene-d5	76.9	0	15-103		%Rec	1	1/7/2022 6:38:23 AM	64740
Surr: 2-Fluorobiphenyl	77.7	0	15-103		%Rec	1	1/7/2022 6:38:23 AM	64740
Surr: 4-Terphenyl-d14	110	0	45-137		%Rec	1	1/7/2022 6:38:23 AM	64740
EPA METHOD 8270SIM							Analyst: **TOM**	
Naphthalene	0.28	0.034	0.10		µg/L	1	12/30/2021 3:26:00 PM	64771
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	12/30/2021 3:26:00 PM	64771
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	12/30/2021 3:26:00 PM	64771
Acenaphthene	0.24	0.031	0.10		µg/L	1	12/30/2021 3:26:00 PM	64771
Fluorene	ND	0.031	0.10		µg/L	1	12/30/2021 3:26:00 PM	64771
Phenanthrene	0.90	0.057	0.10		µg/L	1	12/30/2021 3:26:00 PM	64771
Fluoranthene	ND	0.10	0.20		µg/L	1	12/30/2021 3:26:00 PM	64771
Surr: Nitrobenzene-d5	76.5	0	21.9-89.8		%Rec	1	12/30/2021 3:26:00 PM	64771
Surr: 2-Fluorobiphenyl	60.0	0	15-84.5		%Rec	1	12/30/2021 3:26:00 PM	64771
Surr: 4-Terphenyl-d14	94.5	0	73.1-152		%Rec	1	12/30/2021 3:26:00 PM	64771

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Analytical Report
Lab Order: **2112D00**
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NDD-MW-1
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 9:40:00 AM
Lab ID: 2112D00-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	ND	0.20	0.50		mg/L	5	12/23/2021 2:25:13 PM	R84789
Chloride	230	5.0	10		mg/L	20	12/23/2021 2:38:07 PM	R84789
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	12/23/2021 2:25:13 PM	R84789
Nitrogen, Nitrate (As N)	0.098	0.050	0.50	J	mg/L	5	12/23/2021 2:25:13 PM	R84789
Sulfate	8.4	1.2	2.5		mg/L	5	12/23/2021 2:25:13 PM	R84789

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NDD-MW-1
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 9:40:00 AM
Lab ID: 2112D00-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.61	0.0016	0.0030		mg/L	1	12/29/2021 11:19:36 A	64744
Cadmium	ND	0.0015	0.0020		mg/L	1	12/29/2021 11:19:36 A	64744
Chromium	ND	0.0021	0.0060		mg/L	1	12/29/2021 11:19:36 A	64744
Iron	0.37	0.013	0.050	*	mg/L	1	12/29/2021 11:19:36 A	64744
Manganese	0.31	0.00081	0.0020	*	mg/L	1	12/29/2021 11:19:36 A	64744
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 11:19:36 A	64744
Zinc	ND	0.0064	0.010		mg/L	1	12/29/2021 11:19:36 A	64744
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0032	0.00013	0.0010		mg/L	1	12/29/2021 12:59:46 P	64744
Copper	0.0079	0.00040	0.0010		mg/L	1	12/29/2021 12:59:46 P	64744
Lead	0.00031	0.000061	0.00050	J	mg/L	1	12/29/2021 12:59:46 P	64744
Selenium	ND	0.00037	0.0010		mg/L	1	12/29/2021 12:59:46 P	64744
Uranium	0.0082	0.000069	0.00050		mg/L	1	12/29/2021 12:59:46 P	64744
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:37:46 PM	64998

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Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NDD-MW-1
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 9:40:00 AM
Lab ID: 2112D00-004G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.62	0.0011	0.0020		mg/L	1	12/29/2021 12:45:46 P	B84839
Cadmium	ND	0.00098	0.0020		mg/L	1	12/29/2021 12:45:46 P	B84839
Chromium	ND	0.0020	0.0060		mg/L	1	12/29/2021 12:45:46 P	B84839
Iron	0.073	0.010	0.020		mg/L	1	12/29/2021 12:45:46 P	B84839
Manganese	0.32	0.00058	0.0020	*	mg/L	1	12/29/2021 12:45:46 P	B84839
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 12:45:46 P	B84839
Zinc	0.016	0.0032	0.010		mg/L	1	12/29/2021 12:45:46 P	B84839
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0025	0.00012	0.0010		mg/L	1	12/30/2021 4:11:41 PM	A84886
Copper	0.0045	0.00037	0.0010		mg/L	1	12/30/2021 4:11:41 PM	A84886
Lead	0.00013	0.000057	0.00050	J	mg/L	1	12/30/2021 4:11:41 PM	A84886
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 4:11:41 PM	A84886
Uranium	0.0068	0.000065	0.00050		mg/L	1	12/30/2021 4:11:41 PM	A84886

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Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NDD-MW-2
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 10:00:00 AM
Lab ID: 2112D00-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	120	2.3	10		µg/L	10	12/29/2021 3:03:32 PM	R84851
Toluene	67	0.20	1.0		µg/L	1	12/29/2021 7:48:57 AM	R84831
Ethylbenzene	6.1	0.21	1.0		µg/L	1	12/29/2021 7:48:57 AM	R84831
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/29/2021 7:48:57 AM	R84831
1,2,4-Trimethylbenzene	130	1.2	10		µg/L	10	12/29/2021 3:03:32 PM	R84851
1,3,5-Trimethylbenzene	99	0.18	1.0		µg/L	1	12/29/2021 7:48:57 AM	R84831
1,2-Dichloroethane (EDC)	0.48	0.25	1.0	J	µg/L	1	12/29/2021 7:48:57 AM	R84831
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	12/29/2021 7:48:57 AM	R84831
Naphthalene	6.5	0.50	2.0		µg/L	1	12/29/2021 7:48:57 AM	R84831
1-Methylnaphthalene	3.5	0.84	4.0	J	µg/L	1	12/29/2021 7:48:57 AM	R84831
2-Methylnaphthalene	2.7	0.69	4.0	J	µg/L	1	12/29/2021 7:48:57 AM	R84831
Acetone	5.5	2.5	10	J	µg/L	1	12/29/2021 7:48:57 AM	R84831
2-Butanone	ND	2.0	10		µg/L	1	12/29/2021 7:48:57 AM	R84831
Chloroethane	ND	0.38	2.0		µg/L	1	12/29/2021 7:48:57 AM	R84831
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/29/2021 7:48:57 AM	R84831
Isopropylbenzene	2.6	0.18	1.0		µg/L	1	12/29/2021 7:48:57 AM	R84831
4-Isopropyltoluene	15	0.20	1.0		µg/L	1	12/29/2021 7:48:57 AM	R84831
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/29/2021 7:48:57 AM	R84831
n-Butylbenzene	1.9	0.25	3.0	J	µg/L	1	12/29/2021 7:48:57 AM	R84831
n-Propylbenzene	0.79	0.18	1.0	J	µg/L	1	12/29/2021 7:48:57 AM	R84831
sec-Butylbenzene	0.72	0.14	1.0	J	µg/L	1	12/29/2021 7:48:57 AM	R84831
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/29/2021 7:48:57 AM	R84831
Xylenes, Total	980	3.7	15		µg/L	10	12/29/2021 3:03:32 PM	R84851
Surr: 1,2-Dichloroethane-d4	87.0	0	70-130		%Rec	1	12/29/2021 7:48:57 AM	R84831
Surr: 4-Bromofluorobenzene	77.8	0	70-130		%Rec	1	12/29/2021 7:48:57 AM	R84831
Surr: Dibromofluoromethane	84.6	0	70-130		%Rec	1	12/29/2021 7:48:57 AM	R84831
Surr: Toluene-d8	102	0	70-130		%Rec	1	12/29/2021 7:48:57 AM	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	8.5	0.12	0.50		mg/L	10	12/29/2021 3:03:32 PM	G84851
Surr: 4-Bromofluorobenzene	92.7	0	70-130		%Rec	10	12/29/2021 3:03:32 PM	G84851

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Client Sample ID: NDD-MW-2
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 10:00:00 AM
Lab ID: 2112D00-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.9	0.016	0.064		mg/L	1	12/28/2021 6:51:05 PM	64709
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 6:51:05 PM	64709
Surr: DNOP	99.3	0	15-142		%Rec	1	12/28/2021 6:51:05 PM	64709

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Collection Date: 12/22/2021 10:00:00 AM
Lab ID: 2112D00-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 7:19:39 AM	64740
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 7:19:39 AM	64740
Carbazole	ND	0.56	5.0		µg/L	1	1/7/2022 7:19:39 AM	64740
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 7:19:39 AM	64740
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/7/2022 7:19:39 AM	64740
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 7:19:39 AM	64740
2,4-Dimethylphenol	15	0.97	5.0		µg/L	1	1/7/2022 7:19:39 AM	64740
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/7/2022 7:19:39 AM	64740
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/7/2022 7:19:39 AM	64740
Phenol	15	0.33	5.0		µg/L	1	1/7/2022 7:19:39 AM	64740
Surr: 2-Fluorophenol	60.4	0	15-87		%Rec	1	1/7/2022 7:19:39 AM	64740
Surr: Phenol-d5	0	0	15-67.5	S	%Rec	1	1/7/2022 7:19:39 AM	64740
Surr: 2,4,6-Tribromophenol	94.8	0	15-122		%Rec	1	1/7/2022 7:19:39 AM	64740
Surr: Nitrobenzene-d5	77.4	0	15-103		%Rec	1	1/7/2022 7:19:39 AM	64740
Surr: 2-Fluorobiphenyl	80.8	0	15-103		%Rec	1	1/7/2022 7:19:39 AM	64740
Surr: 4-Terphenyl-d14	114	0	45-137		%Rec	1	1/7/2022 7:19:39 AM	64740
EPA METHOD 8270SIM							Analyst: **TOM**	
Naphthalene	ND	0.034	0.10		µg/L	1	12/30/2021 4:09:00 PM	64771
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	12/30/2021 4:09:00 PM	64771
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	12/30/2021 4:09:00 PM	64771
Acenaphthene	ND	0.031	0.10		µg/L	1	12/30/2021 4:09:00 PM	64771
Fluorene	ND	0.031	0.10		µg/L	1	12/30/2021 4:09:00 PM	64771
Phenanthrene	ND	0.057	0.10		µg/L	1	12/30/2021 4:09:00 PM	64771
Fluoranthene	ND	0.10	0.20		µg/L	1	12/30/2021 4:09:00 PM	64771
Surr: Nitrobenzene-d5	13.5	0	21.9-89.8	S	%Rec	1	12/30/2021 4:09:00 PM	64771
Surr: 2-Fluorobiphenyl	5.50	0	15-84.5	S	%Rec	1	12/30/2021 4:09:00 PM	64771
Surr: 4-Terphenyl-d14	11.0	0	73.1-152	S	%Rec	1	12/30/2021 4:09:00 PM	64771

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NDD-MW-2
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 10:00:00 AM
Lab ID: 2112D00-005E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	ND	0.20	0.50		mg/L	5	12/23/2021 3:16:45 PM	R84789
Chloride	770	25	50	*	mg/L	100	1/8/2022 3:21:18 PM	R85040
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	12/23/2021 3:16:45 PM	R84789
Nitrogen, Nitrate (As N)	ND	0.050	0.50		mg/L	5	12/23/2021 3:16:45 PM	R84789
Sulfate	120	1.2	2.5		mg/L	5	12/23/2021 3:16:45 PM	R84789

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NDD-MW-2
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 10:00:00 AM
Lab ID: 2112D00-005F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.15	0.0016	0.0030		mg/L	1	12/29/2021 11:22:54 A	64744
Cadmium	ND	0.0015	0.0020		mg/L	1	12/29/2021 11:22:54 A	64744
Chromium	ND	0.0021	0.0060		mg/L	1	12/29/2021 11:22:54 A	64744
Iron	0.59	0.013	0.050	*	mg/L	1	12/29/2021 11:22:54 A	64744
Manganese	0.77	0.00081	0.0020	*	mg/L	1	12/29/2021 11:22:54 A	64744
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 11:22:54 A	64744
Zinc	0.014	0.0064	0.010		mg/L	1	12/29/2021 11:22:54 A	64744
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0028	0.00013	0.0010		mg/L	1	12/29/2021 1:02:12 PM	64744
Copper	0.0048	0.0020	0.0050	J	mg/L	5	12/29/2021 1:51:07 PM	64744
Lead	0.00052	0.000061	0.00050		mg/L	1	12/29/2021 1:02:12 PM	64744
Selenium	0.0014	0.00037	0.0010		mg/L	1	12/29/2021 1:02:12 PM	64744
Uranium	0.033	0.00034	0.0025	*	mg/L	5	1/5/2022 3:34:16 PM	64744
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:39:56 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NDD-MW-2
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 10:00:00 AM
Lab ID: 2112D00-005G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.12	0.0011	0.0020		mg/L	1	12/29/2021 12:48:38 P	B84839
Cadmium	ND	0.00098	0.0020		mg/L	1	12/29/2021 12:48:38 P	B84839
Chromium	ND	0.0020	0.0060		mg/L	1	12/29/2021 12:48:38 P	B84839
Iron	0.068	0.010	0.020		mg/L	1	12/29/2021 12:48:38 P	B84839
Manganese	0.76	0.00058	0.0020	*	mg/L	1	12/29/2021 12:48:38 P	B84839
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 12:48:38 P	B84839
Zinc	0.16	0.0032	0.010		mg/L	1	12/29/2021 12:48:38 P	B84839
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0022	0.00012	0.0010		mg/L	1	12/30/2021 4:14:23 PM	A84886
Copper	0.00085	0.00037	0.0010	J	mg/L	1	12/30/2021 4:14:23 PM	A84886
Lead	ND	0.000057	0.00050		mg/L	1	12/30/2021 4:14:23 PM	A84886
Selenium	0.0015	0.00034	0.0010		mg/L	1	12/30/2021 4:14:23 PM	A84886
Uranium	0.036	0.00033	0.0025	*	mg/L	5	12/30/2021 4:54:43 PM	A84886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 10:00:00 AM
Lab ID: 2112D00-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	0.24	0.23	1.0	J	µg/L	1	12/29/2021 8:17:32 AM	R84831
Toluene	0.30	0.20	1.0	J	µg/L	1	12/29/2021 8:17:32 AM	R84831
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
1,2,4-Trimethylbenzene	0.42	0.12	1.0	J	µg/L	1	12/29/2021 8:17:32 AM	R84831
1,3,5-Trimethylbenzene	0.26	0.18	1.0	J	µg/L	1	12/29/2021 8:17:32 AM	R84831
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
Naphthalene	ND	0.50	2.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
Acetone	4.0	2.5	10	J	µg/L	1	12/29/2021 8:17:32 AM	R84831
Bromomethane	ND	0.85	3.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
2-Butanone	ND	2.0	10		µg/L	1	12/29/2021 8:17:32 AM	R84831
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
Chloroethane	ND	0.38	2.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
Chloroform	ND	0.13	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
Chloromethane	ND	0.41	3.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
2-Hexanone	ND	1.8	10		µg/L	1	12/29/2021 8:17:32 AM	R84831
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/29/2021 8:17:32 AM	R84831
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
Styrene	ND	0.14	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
1,1,2-Trichloroethane	0.25	0.20	1.0	J	µg/L	1	12/29/2021 8:17:32 AM	R84831
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/29/2021 8:17:32 AM	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021 10:00:00 AM
Lab ID: 2112D00-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/29/2021 8:17:32 AM	R84831
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	12/29/2021 8:17:32 AM	R84831
Surr: 4-Bromofluorobenzene	97.5	0	70-130		%Rec	1	12/29/2021 8:17:32 AM	R84831
Surr: Dibromofluoromethane	99.3	0	70-130		%Rec	1	12/29/2021 8:17:32 AM	R84831
Surr: Toluene-d8	106	0	70-130		%Rec	1	12/29/2021 8:17:32 AM	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.023	0.012	0.050	J	mg/L	1	12/29/2021 8:17:32 AM	G84831
Surr: 4-Bromofluorobenzene	112	0	70-130		%Rec	1	12/29/2021 8:17:32 AM	G84831

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Qualifiers:

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PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021
Lab ID: 2112D00-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	180	1.1	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
Toluene	2.3	1.0	5.0	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
Ethylbenzene	33	1.1	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
Methyl tert-butyl ether (MTBE)	860	2.0	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
1,2,4-Trimethylbenzene	41	0.61	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
1,3,5-Trimethylbenzene	4.6	0.91	5.0	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
1,2-Dichloroethane (EDC)	2.6	1.3	5.0	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
1,2-Dibromoethane (EDB)	ND	1.5	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
Naphthalene	20	2.5	10		µg/L	5	12/29/2021 8:46:07 AM	R84831
1-Methylnaphthalene	13	4.2	20	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
2-Methylnaphthalene	7.1	3.5	20	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
Acetone	ND	13	50		µg/L	5	12/29/2021 8:46:07 AM	R84831
Bromomethane	ND	4.3	15		µg/L	5	12/29/2021 8:46:07 AM	R84831
2-Butanone	ND	10	50		µg/L	5	12/29/2021 8:46:07 AM	R84831
Chlorobenzene	ND	0.78	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
Chloroethane	ND	1.9	10		µg/L	5	12/29/2021 8:46:07 AM	R84831
Chloroform	1.5	0.67	5.0	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
Chloromethane	2.8	2.1	15	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
cis-1,2-DCE	25	1.9	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
1,2-Dichlorobenzene	ND	0.77	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
1,4-Dichlorobenzene	ND	1.0	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
1,1-Dichloroethane	52	1.4	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
1,1-Dichloroethene	77	1.0	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
1,2-Dichloropropane	1.7	1.0	5.0	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
2-Hexanone	ND	9.0	50		µg/L	5	12/29/2021 8:46:07 AM	R84831
Isopropylbenzene	2.5	0.91	5.0	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
4-Isopropyltoluene	1.3	1.0	5.0	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
4-Methyl-2-pentanone	ND	4.4	50		µg/L	5	12/29/2021 8:46:07 AM	R84831
Methylene Chloride	ND	2.5	15		µg/L	5	12/29/2021 8:46:07 AM	R84831
n-Butylbenzene	1.4	1.3	15	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
n-Propylbenzene	3.3	0.91	5.0	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
sec-Butylbenzene	1.5	0.72	5.0	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
Styrene	ND	0.68	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
tert-Butylbenzene	ND	1.2	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
1,2,4-Trichlorobenzene	ND	1.2	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831
1,1,2-Trichloroethane	1.4	0.99	5.0	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
Trichloroethene (TCE)	3.1	1.0	5.0	J	µg/L	5	12/29/2021 8:46:07 AM	R84831
Vinyl chloride	ND	1.6	5.0		µg/L	5	12/29/2021 8:46:07 AM	R84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021
Lab ID: 2112D00-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	52	1.9	7.5		µg/L	5	12/29/2021 8:46:07 AM	R84831
Surr: 1,2-Dichloroethane-d4	94.4	0	70-130		%Rec	5	12/29/2021 8:46:07 AM	R84831
Surr: 4-Bromofluorobenzene	89.5	0	70-130		%Rec	5	12/29/2021 8:46:07 AM	R84831
Surr: Dibromofluoromethane	92.1	0	70-130		%Rec	5	12/29/2021 8:46:07 AM	R84831
Surr: Toluene-d8	103	0	70-130		%Rec	5	12/29/2021 8:46:07 AM	R84831
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	2.1	0.061	0.25		mg/L	5	12/29/2021 8:46:07 AM	G84831
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	5	12/29/2021 8:46:07 AM	G84831

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021
Lab ID: 2112D00-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.1	0.016	0.064		mg/L	1	12/28/2021 7:14:29 PM	64709
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/28/2021 7:14:29 PM	64709
Surr: DNOP	94.5	0	15-142		%Rec	1	12/28/2021 7:14:29 PM	64709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021
Lab ID: 2112D00-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JME**	
Aniline	ND	0.50	5.0		µg/L	1	1/7/2022 8:00:36 AM	64740
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 8:00:36 AM	64740
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/7/2022 8:00:36 AM	64740
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 8:00:36 AM	64740
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/7/2022 8:00:36 AM	64740
Carbazole	ND	0.56	5.0		µg/L	1	1/7/2022 8:00:36 AM	64740
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 8:00:36 AM	64740
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/7/2022 8:00:36 AM	64740
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/7/2022 8:00:36 AM	64740
Diethyl phthalate	ND	3.9	10		µg/L	1	1/7/2022 8:00:36 AM	64740
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 8:00:36 AM	64740
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/7/2022 8:00:36 AM	64740
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/7/2022 8:00:36 AM	64740
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/7/2022 8:00:36 AM	64740
Phenol	1.7	0.33	5.0	J	µg/L	1	1/7/2022 8:00:36 AM	64740
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/7/2022 8:00:36 AM	64740
Surr: 2-Fluorophenol	64.1	0	15-87		%Rec	1	1/7/2022 8:00:36 AM	64740
Surr: Phenol-d5	46.2	0	15-67.5		%Rec	1	1/7/2022 8:00:36 AM	64740
Surr: 2,4,6-Tribromophenol	103	0	15-122		%Rec	1	1/7/2022 8:00:36 AM	64740
Surr: Nitrobenzene-d5	77.4	0	15-103		%Rec	1	1/7/2022 8:00:36 AM	64740
Surr: 2-Fluorobiphenyl	74.8	0	15-103		%Rec	1	1/7/2022 8:00:36 AM	64740
Surr: 4-Terphenyl-d14	118	0	45-137		%Rec	1	1/7/2022 8:00:36 AM	64740
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	9.0	0.48	10	J	µg/L	10	1/5/2022 3:03:00 PM	64771
Naphthalene	200	0.34	1.0		µg/L	10	12/30/2021 4:54:00 PM	64771
1-Methylnaphthalene	160	0.24	1.0		µg/L	10	12/30/2021 4:54:00 PM	64771
2-Methylnaphthalene	94	0.34	1.0		µg/L	10	12/30/2021 4:54:00 PM	64771
Acenaphthene	13	0.31	1.0		µg/L	10	12/30/2021 4:54:00 PM	64771
Fluorene	21	0.31	1.0		µg/L	10	12/30/2021 4:54:00 PM	64771
Phenanthrene	24	0.57	1.0		µg/L	10	12/30/2021 4:54:00 PM	64771
Anthracene	4.2	0.34	1.0		µg/L	10	12/30/2021 4:54:00 PM	64771
Pyrene	ND	1.6	2.0		µg/L	10	12/30/2021 4:54:00 PM	64771
Benz(a)anthracene	ND	0.36	1.0		µg/L	10	12/30/2021 4:54:00 PM	64771
Chrysene	ND	0.24	1.0		µg/L	10	12/30/2021 4:54:00 PM	64771
Surr: Nitrobenzene-d5	695	0	21.9-89.8	S	%Rec	10	12/30/2021 4:54:00 PM	64771
Surr: 2-Fluorobiphenyl	565	0	15-84.5	S	%Rec	10	12/30/2021 4:54:00 PM	64771
Surr: 4-Terphenyl-d14	1020	0	73.1-152	S	%Rec	10	12/30/2021 4:54:00 PM	64771

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021
Lab ID: 2112D00-007E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **LRN**	
Fluoride	0.27	0.20	0.50	J	mg/L	5	12/23/2021 3:42:31 PM	R84789
Chloride	240	5.0	10		mg/L	20	12/23/2021 3:55:24 PM	R84789
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	12/23/2021 3:42:31 PM	R84789
Nitrogen, Nitrate (As N)	ND	0.050	0.50		mg/L	5	12/23/2021 3:42:31 PM	R84789
Sulfate	93	1.2	2.5		mg/L	5	12/23/2021 3:42:31 PM	R84789

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021
Lab ID: 2112D00-007F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.63	0.0016	0.0030		mg/L	1	12/29/2021 11:26:01 A	64744
Cadmium	ND	0.0015	0.0020		mg/L	1	12/29/2021 11:26:01 A	64744
Chromium	0.0024	0.0021	0.0060	J	mg/L	1	12/29/2021 11:26:01 A	64744
Iron	2.7	0.064	0.25	*	mg/L	5	12/29/2021 11:27:24 A	64744
Manganese	2.6	0.0041	0.010	*	mg/L	5	12/29/2021 11:27:24 A	64744
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 11:26:01 A	64744
Zinc	0.0085	0.0064	0.010	J	mg/L	1	12/29/2021 11:26:01 A	64744
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0030	0.00013	0.0010		mg/L	1	12/29/2021 1:04:39 PM	64744
Copper	0.0035	0.00040	0.0010		mg/L	1	12/29/2021 1:04:39 PM	64744
Lead	0.0024	0.000061	0.00050		mg/L	1	12/29/2021 1:04:39 PM	64744
Selenium	0.00068	0.00037	0.0010	J	mg/L	1	12/29/2021 1:04:39 PM	64744
Uranium	0.020	0.00034	0.0025		mg/L	5	1/5/2022 3:36:43 PM	64744
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 4:42:06 PM	64998

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112D00**
Date Reported: **1/18/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-22-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/22/2021
Lab ID: 2112D00-007G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.55	0.0011	0.0020		mg/L	1	12/29/2021 12:56:14 P	B84839
Cadmium	ND	0.00098	0.0020		mg/L	1	12/29/2021 12:56:14 P	B84839
Chromium	ND	0.0020	0.0060		mg/L	1	12/29/2021 12:56:14 P	B84839
Iron	0.45	0.010	0.020	*	mg/L	1	12/29/2021 12:56:14 P	B84839
Manganese	2.6	0.0029	0.010	*	mg/L	5	12/29/2021 12:57:42 P	B84839
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 12:56:14 P	B84839
Zinc	0.016	0.0032	0.010		mg/L	1	12/29/2021 12:56:14 P	B84839
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0019	0.00012	0.0010		mg/L	1	12/30/2021 4:17:04 PM	A84886
Copper	0.00050	0.00037	0.0010	J	mg/L	1	12/30/2021 4:17:04 PM	A84886
Lead	ND	0.000057	0.00050		mg/L	1	12/30/2021 4:17:04 PM	A84886
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 4:17:04 PM	A84886
Uranium	0.021	0.000065	0.00050		mg/L	1	12/30/2021 4:17:04 PM	A84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 5:08:11 PM	65003

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64744** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **64744** RunNo: **84839**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984259** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS-64744** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **64744** RunNo: **84839**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984261** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0024	0.0030	0.002000	0	118	50	150			J
Cadmium	0.0016	0.0020	0.002000	0	77.7	50	150			J
Chromium	0.0065	0.0060	0.006000	0	108	50	150			
Manganese	0.0023	0.0020	0.002000	0	113	50	150			
Silver	0.0052	0.0050	0.005000	0	105	50	150			
Zinc	0.012	0.010	0.01000	0	118	50	150			

Sample ID: **LCS-64744** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **64744** RunNo: **84839**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984263** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0030	0.5000	0	98.9	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.8	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Iron	0.50	0.050	0.5000	0	100	85	115			
Manganese	0.48	0.0020	0.5000	0	95.7	85	115			
Silver	0.099	0.0050	0.1000	0	98.7	85	115			
Zinc	0.49	0.010	0.5000	0	98.6	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984265** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Cadmium	ND	0.0020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984265** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **A84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984267** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0016	0.0030	0.002000	0	81.5	50	150			J
Cadmium	0.0013	0.0020	0.002000	0	65.9	50	150			J
Chromium	0.0058	0.0060	0.006000	0	97.4	50	150			J
Iron	0.020	0.050	0.02000	0	97.7	50	150			J
Manganese	0.0020	0.0020	0.002000	0	98.4	50	150			J
Silver	0.0050	0.0050	0.005000	0	99.2	50	150			J
Zinc	0.010	0.010	0.01000	0	101	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984272** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0030	0.5000	0	99.7	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.8	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Iron	0.48	0.050	0.5000	0	96.6	85	115			
Manganese	0.48	0.0020	0.5000	0	96.1	85	115			
Silver	0.099	0.0050	0.1000	0	99.1	85	115			
Zinc	0.49	0.010	0.5000	0	99.0	85	115			

Sample ID: **LLLCS-64744** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **64744** RunNo: **84839**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984299** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.020	0.050	0.02000	0	102	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984352** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984353** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0016	0.0020	0.002000	0	81.5	50	150			J
Cadmium	0.0013	0.0020	0.002000	0	65.9	50	150			J
Chromium	0.0058	0.0060	0.006000	0	97.4	50	150			J
Iron	0.020	0.020	0.02000	0	97.7	50	150			J
Manganese	0.0020	0.0020	0.002000	0	98.4	50	150			J
Silver	0.0050	0.0050	0.005000	0	99.2	50	150			J
Zinc	0.010	0.010	0.01000	0	101	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984354** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.7	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.8	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Iron	0.48	0.020	0.5000	0	96.6	85	115			
Manganese	0.48	0.0020	0.5000	0	96.1	85	115			
Silver	0.099	0.0050	0.1000	0	99.1	85	115			
Zinc	0.49	0.010	0.5000	0	99.0	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984466** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B84839**	RunNo: **84839**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984466** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B84839**	RunNo: **84839**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984467** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	90.2	50	150			J
Cadmium	0.0017	0.0020	0.002000	0	83.5	50	150			J
Chromium	0.0064	0.0060	0.006000	0	106	50	150			
Iron	0.023	0.020	0.02000	0	114	50	150			
Manganese	0.0022	0.0020	0.002000	0	112	50	150			
Silver	0.0052	0.0050	0.005000	0	103	50	150			
Zinc	0.011	0.010	0.01000	0	109	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B84839**	RunNo: **84839**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984468** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	101	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	100	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	98.9	85	115			
Silver	0.10	0.0050	0.1000	0	99.8	85	115			
Zinc	0.50	0.010	0.5000	0	99.1	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64744** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **64744** RunNo: **84848**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984554** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID: **MSLLLCS-64744** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **64744** RunNo: **84848**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984555** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00096	0.0010	0.001000	0	95.7	50	150			J
Copper	0.0011	0.0010	0.001000	0	108	50	150			
Lead	0.00050	0.00050	0.0005000	0	100	50	150			
Selenium	0.0010	0.0010	0.001000	0	101	50	150			
Uranium	0.00049	0.00050	0.0005000	0	97.1	50	150			J

Sample ID: **MSLCS-64744** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **64744** RunNo: **84848**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984556** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.0	85	115			
Copper	0.025	0.0010	0.02500	0	98.8	85	115			
Lead	0.012	0.00050	0.01250	0	98.5	85	115			
Selenium	0.024	0.0010	0.02500	0	96.9	85	115			
Uranium	0.012	0.00050	0.01250	0	99.6	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **A84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986042** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986043** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00091	0.0010	0.001000	0	91.2	50	150			J
Copper	0.00096	0.0010	0.001000	0	96.2	50	150			J
Lead	0.00048	0.00050	0.0005000	0	96.7	50	150			J
Selenium	0.0010	0.0010	0.001000	0	99.8	50	150			J
Uranium	0.00048	0.00050	0.0005000	0	95.2	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986044** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Copper	0.025	0.0010	0.02500	0	99.8	85	115			
Lead	0.012	0.00050	0.01250	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	96.6	85	115			
Uranium	0.012	0.00050	0.01250	0	95.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64998** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **64998** RunNo: **85151**
Prep Date: **1/12/2022** Analysis Date: **1/13/2022** SeqNo: **2995598** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCS-64998** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **64998** RunNo: **85151**
Prep Date: **1/12/2022** Analysis Date: **1/13/2022** SeqNo: **2995600** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	103	85	115			

Sample ID: **LCSLL-64998** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **64998** RunNo: **85151**
Prep Date: **1/12/2022** Analysis Date: **1/13/2022** SeqNo: **2995627** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.000080	0.00020	0.0001500	0	53.2	50	150			J

Sample ID: **MB-65003** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **65003** RunNo: **85151**
Prep Date: **1/13/2022** Analysis Date: **1/13/2022** SeqNo: **2995628** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-65003** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **65003** RunNo: **85151**
Prep Date: **1/13/2022** Analysis Date: **1/13/2022** SeqNo: **2995629** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.000081	0.00020	0.0001500	0	54.3	50	150			J

Sample ID: **LCS-65003** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **65003** RunNo: **85151**
Prep Date: **1/13/2022** Analysis Date: **1/13/2022** SeqNo: **2995630** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

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Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R84789**	RunNo: **84789**							
Prep Date:	Analysis Date: **12/23/2021**	SeqNo: **2982039**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R84789**	RunNo: **84789**							
Prep Date:	Analysis Date: **12/23/2021**	SeqNo: **2982040**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	101	90	110			
Chloride	4.9	0.50	5.000	0	98.5	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	103	90	110			
Nitrogen, Nitrate (As N)	2.7	0.10	2.500	0	106	90	110			
Sulfate	9.8	0.50	10.00	0	97.6	90	110			

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R85040**	RunNo: **85040**							
Prep Date:	Analysis Date: **1/8/2022**	SeqNo: **2991990**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R85040**	RunNo: **85040**							
Prep Date:	Analysis Date: **1/8/2022**	SeqNo: **2991991**	Units: **mg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	91.4	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64709** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **64709** RunNo: **84809**
Prep Date: **12/23/2021** Analysis Date: **12/28/2021** SeqNo: **2984405** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.020	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.037		0.03750		99.5	15	142			

Sample ID: **LCS-64709** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **64709** RunNo: **84809**
Prep Date: **12/23/2021** Analysis Date: **12/28/2021** SeqNo: **2984406** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	58.2	31.7	75.4			
Surr: DNOP	0.019		0.01875		98.9	15	142			

Sample ID: **LCSD-64709** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **64709** RunNo: **84809**
Prep Date: **12/23/2021** Analysis Date: **12/28/2021** SeqNo: **2984407** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.13	0.064	0.1875	0	68.0	31.7	75.4	15.5	20	
Surr: DNOP	0.020		0.01875		105	15	142	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R84831** RunNo: **84831**
Prep Date: Analysis Date: **12/28/2021** SeqNo: **2983890** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130			
Toluene	20	1.0	20.00	0	99.4	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	104	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.4	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R84831** RunNo: **84831**
Prep Date: Analysis Date: **12/28/2021** SeqNo: **2983922** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R84831**	RunNo: **84831**
Prep Date:	Analysis Date: **12/28/2021**	SeqNo: **2983922** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R84851**	RunNo: **84851**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984836** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	108	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.1	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R84851**	RunNo: **84851**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984865** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R84851**	RunNo: **84851**
Prep Date:	Analysis Date: **12/29/2021**	SeqNo: **2984865** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.4	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64740** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **64740** RunNo: **84991**
Prep Date: **12/28/2021** Analysis Date: **1/6/2022** SeqNo: **2990565** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Benzoic acid	ND	20								
Benzyl alcohol	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	10								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
Di-n-octyl phthalate	ND	20								
Dibenzofuran	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
Phenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	130		200.0		63.0	15	87			
Surr: Phenol-d5	96		200.0		48.0	15	67.5			
Surr: 2,4,6-Tribromophenol	150		200.0		72.6	15	122			
Surr: Nitrobenzene-d5	70		100.0		69.9	15	103			
Surr: 2-Fluorobiphenyl	66		100.0		66.4	15	103			
Surr: 4-Terphenyl-d14	110		100.0		113	45	137			

Sample ID: **LCS-64740** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **64740** RunNo: **84991**
Prep Date: **12/28/2021** Analysis Date: **1/6/2022** SeqNo: **2990566** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	59	5.0	100.0	0	58.8	15	87.6			
Phenol	85	5.0	200.0	0	42.3	16.8	70.5			
Surr: 2-Fluorophenol	110		200.0		54.8	15	87			
Surr: Phenol-d5	81		200.0		40.6	15	67.5			
Surr: 2,4,6-Tribromophenol	150		200.0		75.0	15	122			
Surr: Nitrobenzene-d5	68		100.0		67.9	15	103			
Surr: 2-Fluorobiphenyl	69		100.0		69.2	15	103			
Surr: 4-Terphenyl-d14	120		100.0		117	45	137			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCSD-64740** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **64740** RunNo: **84991**
Prep Date: **12/28/2021** Analysis Date: **1/6/2022** SeqNo: **2990567** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	58	5.0	100.0	0	58.0	15	87.6	1.28	30.4	
Phenol	80	5.0	200.0	0	40.1	16.8	70.5	5.17	37.2	
Surr: 2-Fluorophenol	100		200.0		50.3	15	87	0	0	
Surr: Phenol-d5	76		200.0		38.2	15	67.5	0	0	
Surr: 2,4,6-Tribromophenol	130		200.0		63.0	15	122	0	0	
Surr: Nitrobenzene-d5	65		100.0		64.9	15	103	0	0	
Surr: 2-Fluorobiphenyl	64		100.0		64.1	15	103	0	0	
Surr: 4-Terphenyl-d14	110		100.0		105	45	137	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb-64771** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64771** RunNo: **84909**
Prep Date: **12/29/2021** Analysis Date: **12/30/2021** SeqNo: **2987172** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Surr: Nitrobenzene-d5	2.4		4.000		59.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	4.8		8.000		59.8	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.7		4.000		43.0	15	84.5			
Surr: 4-Terphenyl-d14	3.6		4.000		91.0	73.1	152			

Sample ID: **lcs-64771** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64771** RunNo: **84909**
Prep Date: **12/29/2021** Analysis Date: **12/30/2021** SeqNo: **2987173** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.64	0.10	2.000	0	32.0	15	79.8			
Naphthalene	0.96	0.10	2.000	0	48.0	26.5	90.9			
1-Methylnaphthalene	1.0	0.10	2.000	0	50.0	27.9	88.2			
2-Methylnaphthalene	1.0	0.10	2.000	0	50.0	29.2	87.5			
Acenaphthene	1.0	0.10	2.000	0	51.0	25.6	93.9			
Fluorene	1.2	0.10	2.000	0	59.0	27.4	95.1			
Phenanthrene	1.2	0.10	2.000	0	59.0	25.1	104			
Anthracene	1.4	0.10	2.000	0	69.0	30.1	100			
Fluoranthene	1.9	0.20	2.000	0	93.0	41.6	126			
Pyrene	1.5	0.20	2.000	0	74.0	34.5	112			
Benz(a)anthracene	2.6	0.10	2.000	0	132	43.9	132			
Chrysene	1.5	0.10	2.000	0	77.0	39.8	118			
Surr: Nitrobenzene-d5	3.7		5.000		74.4	21.9	89.8			
Surr: 2,4,6-Tribromophenol	7.3		10.00		72.8	23.4	71.6			S
Surr: 2-Fluorobiphenyl	2.6		5.000		52.0	15	84.5			
Surr: 4-Terphenyl-d14	5.2		5.000		104	73.1	152			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **lcsd-64771** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **64771** RunNo: **84909**
Prep Date: **12/29/2021** Analysis Date: **12/30/2021** SeqNo: **2987174** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.84	0.10	4.000	0	21.0	15	79.8	27.0	34.2	
Naphthalene	1.3	0.10	4.000	0	32.5	26.5	90.9	30.1	37.6	
1-Methylnaphthalene	1.4	0.10	4.000	0	34.0	27.9	88.2	30.5	33.1	
2-Methylnaphthalene	1.4	0.10	4.000	0	34.0	29.2	87.5	30.5	35.4	
Acenaphthene	1.4	0.10	4.000	0	36.0	25.6	93.9	34.1	36.3	
Fluorene	1.6	0.10	4.000	0	39.5	27.4	95.1	29.0	32.2	
Phenanthrene	1.6	0.10	4.000	0	39.0	25.1	104	27.7	32.9	
Anthracene	1.8	0.10	4.000	0	44.0	30.1	100	24.2	31.5	
Fluoranthene	2.2	0.20	4.000	0	54.5	41.6	126	15.8	26.5	
Pyrene	1.8	0.20	4.000	0	46.0	34.5	112	21.7	23.3	
Benz(a)anthracene	2.8	0.10	4.000	0	70.5	43.9	132	6.59	29.5	
Chrysene	1.8	0.10	4.000	0	46.0	39.8	118	17.8	22.3	
Surr: Nitrobenzene-d5	4.9		10.00		49.2	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	9.2		20.00		45.8	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	3.4		10.00		34.4	15	84.5	0	0	
Surr: 4-Terphenyl-d14	6.3		10.00		63.4	73.1	152	0	0	S

Sample ID: **mb-64684** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64684** RunNo: **84909**
Prep Date: **12/22/2021** Analysis Date: **12/30/2021** SeqNo: **2987188** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	2.3		4.000		58.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	5.3		8.000		66.5	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.0		4.000		49.0	15	84.5			
Surr: 4-Terphenyl-d14	4.1		4.000		103	73.1	152			

Sample ID: **lcs-64684** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64684** RunNo: **84909**
Prep Date: **12/22/2021** Analysis Date: **12/30/2021** SeqNo: **2987189** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	4.2		5.000		84.8	21.9	89.8			
Surr: 2,4,6-Tribromophenol	7.6		10.00		75.6	23.4	71.6			S
Surr: 2-Fluorobiphenyl	3.5		5.000		69.6	15	84.5			
Surr: 4-Terphenyl-d14	5.6		5.000		112	73.1	152			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **lcsd-64684** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **64684** RunNo: **84909**
Prep Date: **12/22/2021** Analysis Date: **12/31/2021** SeqNo: **2987190** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.9		5.000		78.4	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	6.9		10.00		68.6	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	3.2		5.000		64.4	15	84.5	0	0	
Surr: 4-Terphenyl-d14	5.7		5.000		114	73.1	152	0	0	

Sample ID: **mb-64693** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64693** RunNo: **84979**
Prep Date: **12/22/2021** Analysis Date: **1/5/2022** SeqNo: **2989841** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	1.9		4.000		48.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	3.3		8.000		41.5	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.7		4.000		43.5	15	84.5			
Surr: 4-Terphenyl-d14	4.0		4.000		101	73.1	152			

Sample ID: **lcs-64693** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64693** RunNo: **84979**
Prep Date: **12/22/2021** Analysis Date: **1/5/2022** SeqNo: **2989842** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.4		5.000		68.4	21.9	89.8			
Surr: 2,4,6-Tribromophenol	6.4		10.00		64.2	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.9		5.000		57.6	15	84.5			
Surr: 4-Terphenyl-d14	5.4		5.000		109	73.1	152			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D00**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **2.5ng gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G84831** RunNo: **84831**
Prep Date: Analysis Date: **12/28/2021** SeqNo: **2983936** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.5	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G84831** RunNo: **84831**
Prep Date: Analysis Date: **12/28/2021** SeqNo: **2983955** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		112	70	130			

Sample ID: **2.5ng gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G84851** RunNo: **84851**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984868** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G84851** RunNo: **84851**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984889** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2112D00** RcptNo: **1**

Received By: **Joseph Alderette** **12/22/2021 2:40:00 PM**

Completed By: **Desiree Dominguez** **12/22/2021 2:50:35 PM**

Reviewed By: Sec 12/22/21

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
   Samples were collected the same day and chilled.
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 18 (<2 or >12 unless noted)
Adjusted? NO
Checked by: YN 12/22/21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks: For sample 0018 0078 did not receive 504.1 VOAs. DAD 12.22.21

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.0					
2	1.7					
3	8.2					

Released to Imaging: 11/25/2022 10:22:25 AM
Received by OCD: 3/25/2022 3:35:30 PM

Chain-of-Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown NM,87301

Phone #: 808-640-1823

Email or Fax#:

QA/QC Package:
Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
NELAC ☐ Other

EDD (Type)

X Standard Rush

Project Name:
2021 GW Sampling 4th Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Brian McLoughlin

Sampler:
On Ice: ☑ Yes ☐ No
# of Coolers: 3
Cooler Temp(including CF): 2.9 + 0.1 = 3.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2112D00	See Analyte List	VOC	TPH GRO	TPH DRO/MRO	SVOC	1,4 Dioxane	WQCC METALS	cations/anions	nitrate/nitrate	8011 EDB	COD	Cyanide	TDS/TSS	General Chemistry	PFAS
12-22-21	8:30		EB-12-22-21		12	-001	X	X	X	X	X		X	X	X						
12-22-21	8:45		MWTF-04R		12	-002	X	X	X	X	X		X	X	X						
12-22-21	9:20		MWTF-01R		12	-003	X	X	X	X	X		X	X	X						
12-22-21	9:40		NDD-MW-1		12	-004	X	X	X	X	X		X	X	X						
12-22-21	10:00		NDD-MW-2		12	-005	X	X	X	X	X		X	X	X						
12-22-21	10:00		FB-12-22-21		2	-006		X													
12-22-21	—		DUP-12-22-21		12	-007	X	X	X	X	X		X	X	X						
			~~Trip Blank~~			~~-008~~															
			per sampler bottle			sn 12/22/21															

Date	Time:	Relinquished by:	Received by:	Via:	Date	Time
12-22-21	1:30	Hilario Tafoya		courier	12.22.21	14:40
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Cooler #2. temp 1.6 + 0.1 = 1.7°C
Cooler # 3. temp 8.1 + 0.1 = 8.2°C

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

January 25, 2022

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL:
FAX

RE: 2021 GW Sampling 4th Quarter OrderNo.: 2112E16

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 7 sample(s) on 12/28/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Case Narrative

WO#: **2112E16**
Date: **1/25/2022**

CLIENT: Marathon
Project: 2021 GW Sampling 4th Quarter

Analytical Notes Regarding EPA Method 8270:
Pyridine is reported with an "E" flag. The "E" flag is used to represent an estimated value. Pyridine was not detected in the sample, but the calibration curve for this compound did not meet the method requirements.

"S" flags denote that the sample surrogate or spike result is outside of the acceptable limits due to sample dilution or matrix interferences.

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:00:00 AM
Lab ID: 2112E16-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
Toluene	ND	0.20	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
Naphthalene	ND	0.50	2.0		µg/L	1	12/29/2021 10:13:31 P	R84851
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/29/2021 10:13:31 P	R84851
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/29/2021 10:13:31 P	R84851
Acetone	3.6	2.5	10	J	µg/L	1	12/29/2021 10:13:31 P	R84851
Bromomethane	ND	0.85	3.0		µg/L	1	12/29/2021 10:13:31 P	R84851
2-Butanone	ND	2.0	10		µg/L	1	12/29/2021 10:13:31 P	R84851
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
Chloroethane	ND	0.38	2.0		µg/L	1	12/29/2021 10:13:31 P	R84851
Chloroform	ND	0.13	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
Chloromethane	0.61	0.41	3.0	J	µg/L	1	12/29/2021 10:13:31 P	R84851
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
2-Hexanone	ND	1.8	10		µg/L	1	12/29/2021 10:13:31 P	R84851
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/29/2021 10:13:31 P	R84851
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/29/2021 10:13:31 P	R84851
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/29/2021 10:13:31 P	R84851
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
Styrene	ND	0.14	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/29/2021 10:13:31 P	R84851

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:00:00 AM
Lab ID: 2112E16-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/29/2021 10:13:31 P	R84851
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	1	12/29/2021 10:13:31 P	R84851
Surr: 4-Bromofluorobenzene	99.6	0	70-130		%Rec	1	12/29/2021 10:13:31 P	R84851
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	12/29/2021 10:13:31 P	R84851
Surr: Toluene-d8	98.6	0	70-130		%Rec	1	12/29/2021 10:13:31 P	R84851
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/29/2021 10:13:31 P	G84851
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	12/29/2021 10:13:31 P	G84851

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:00:00 AM
Lab ID: 2112E16-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	ND	0.016	0.064		mg/L	1	12/30/2021 7:55:08 PM	64796
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/30/2021 7:55:08 PM	64796
Surr: DNOP	78.9	0	15-142		%Rec	1	12/30/2021 7:55:08 PM	64796

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:00:00 AM
Lab ID: 2112E16-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	1/7/2022 4:30:50 PM	64785
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 4:30:50 PM	64785
Benzyl alcohol	ND	0.68	5.0		µg/L	1	1/7/2022 4:30:50 PM	64785
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 4:30:50 PM	64785
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	1/7/2022 4:30:50 PM	64785
Carbazole	ND	0.56	5.0		µg/L	1	1/7/2022 4:30:50 PM	64785
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 4:30:50 PM	64785
Dibenzofuran	ND	0.38	5.0		µg/L	1	1/7/2022 4:30:50 PM	64785
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	1/7/2022 4:30:50 PM	64785
Diethyl phthalate	ND	3.9	10		µg/L	1	1/7/2022 4:30:50 PM	64785
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 4:30:50 PM	64785
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/7/2022 4:30:50 PM	64785
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/7/2022 4:30:50 PM	64785
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/7/2022 4:30:50 PM	64785
Phenol	ND	0.33	5.0		µg/L	1	1/7/2022 4:30:50 PM	64785
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	1/7/2022 4:30:50 PM	64785
Surr: 2-Fluorophenol	59.9	0	15-87		%Rec	1	1/7/2022 4:30:50 PM	64785
Surr: Phenol-d5	43.2	0	15-67.5		%Rec	1	1/7/2022 4:30:50 PM	64785
Surr: 2,4,6-Tribromophenol	78.9	0	15-122		%Rec	1	1/7/2022 4:30:50 PM	64785
Surr: Nitrobenzene-d5	70.3	0	15-103		%Rec	1	1/7/2022 4:30:50 PM	64785
Surr: 2-Fluorobiphenyl	72.2	0	15-103		%Rec	1	1/7/2022 4:30:50 PM	64785
Surr: 4-Terphenyl-d14	105	0	45-137		%Rec	1	1/7/2022 4:30:50 PM	64785
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	12/30/2021 9:29:00 PM	64771
Naphthalene	ND	0.034	0.10		µg/L	1	12/30/2021 9:29:00 PM	64771
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	12/30/2021 9:29:00 PM	64771
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	12/30/2021 9:29:00 PM	64771
Acenaphthene	ND	0.031	0.10		µg/L	1	12/30/2021 9:29:00 PM	64771
Fluorene	ND	0.031	0.10		µg/L	1	12/30/2021 9:29:00 PM	64771
Phenanthrene	ND	0.057	0.10		µg/L	1	12/30/2021 9:29:00 PM	64771
Anthracene	ND	0.034	0.10		µg/L	1	12/30/2021 9:29:00 PM	64771
Pyrene	ND	0.16	0.20		µg/L	1	12/30/2021 9:29:00 PM	64771
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	12/30/2021 9:29:00 PM	64771
Chrysene	ND	0.024	0.10		µg/L	1	12/30/2021 9:29:00 PM	64771
Surr: Nitrobenzene-d5	55.5	0	21.9-89.8		%Rec	1	12/30/2021 9:29:00 PM	64771
Surr: 2-Fluorobiphenyl	35.5	0	15-84.5		%Rec	1	12/30/2021 9:29:00 PM	64771
Surr: 4-Terphenyl-d14	107	0	73.1-152		%Rec	1	12/30/2021 9:29:00 PM	64771

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:00:00 AM
Lab ID: 2112E16-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.040	0.10		mg/L	1	12/29/2021 2:48:24 PM	R84860
Chloride	ND	0.25	0.50		mg/L	1	12/29/2021 2:48:24 PM	R84860
Nitrogen, Nitrite (As N)	ND	0.0053	0.10		mg/L	1	12/29/2021 2:48:24 PM	R84860
Nitrogen, Nitrate (As N)	0.061	0.010	0.10	J	mg/L	1	12/29/2021 2:48:24 PM	R84860
Sulfate	ND	0.25	0.50		mg/L	1	12/29/2021 2:48:24 PM	R84860

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:00:00 AM
Lab ID: 2112E16-001F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.0016	0.0030		mg/L	1	1/4/2022 10:50:58 AM	64812
Cadmium	ND	0.0015	0.0020		mg/L	1	1/4/2022 10:50:58 AM	64812
Chromium	ND	0.0021	0.0060		mg/L	1	1/4/2022 10:50:58 AM	64812
Iron	ND	0.013	0.050		mg/L	1	1/4/2022 10:50:58 AM	64812
Manganese	ND	0.00081	0.0020		mg/L	1	1/4/2022 10:50:58 AM	64812
Silver	ND	0.0013	0.0050		mg/L	1	1/4/2022 10:50:58 AM	64812
Zinc	ND	0.0064	0.010		mg/L	1	1/4/2022 10:50:58 AM	64812
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	ND	0.00013	0.0010		mg/L	1	1/4/2022 1:56:39 PM	64812
Copper	ND	0.00040	0.0010		mg/L	1	1/4/2022 1:56:39 PM	64812
Lead	ND	0.000061	0.00050		mg/L	1	1/4/2022 1:56:39 PM	64812
Selenium	ND	0.00037	0.0010		mg/L	1	1/4/2022 1:56:39 PM	64812
Uranium	ND	0.000069	0.00050		mg/L	1	1/4/2022 1:56:39 PM	64812
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 5:55:27 PM	65003

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:00:00 AM
Lab ID: 2112E16-001G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.0011	0.0020		mg/L	1	12/29/2021 1:37:36 PM	B84839
Cadmium	ND	0.00098	0.0020		mg/L	1	12/29/2021 1:37:36 PM	B84839
Chromium	ND	0.0020	0.0060		mg/L	1	12/29/2021 1:37:36 PM	B84839
Iron	ND	0.010	0.020		mg/L	1	12/29/2021 1:37:36 PM	B84839
Manganese	ND	0.00058	0.0020		mg/L	1	12/29/2021 1:37:36 PM	B84839
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 1:37:36 PM	B84839
Zinc	0.0046	0.0032	0.010	J	mg/L	1	12/29/2021 1:37:36 PM	B84839
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	ND	0.00012	0.0010		mg/L	1	12/30/2021 4:49:21 PM	A84886
Copper	ND	0.00037	0.0010		mg/L	1	12/30/2021 4:49:21 PM	A84886
Lead	ND	0.000057	0.00050		mg/L	1	12/30/2021 4:49:21 PM	A84886
Selenium	ND	0.00034	0.0010		mg/L	1	12/30/2021 4:49:21 PM	A84886
Uranium	0.00038	0.000065	0.00050	J	mg/L	1	12/30/2021 4:49:21 PM	A84886
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 5:57:38 PM	65003

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:05:00 AM
Lab ID: 2112E16-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	16	0.23	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
Toluene	ND	0.20	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
Ethylbenzene	3.6	0.21	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
Methyl tert-butyl ether (MTBE)	4.0	0.39	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
1,2,4-Trimethylbenzene	1.1	0.12	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
Naphthalene	ND	0.50	2.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
Acetone	ND	2.5	10		µg/L	1	1/4/2022 12:14:34 PM	R84952
Bromomethane	ND	0.85	3.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
2-Butanone	ND	2.0	10		µg/L	1	1/4/2022 12:14:34 PM	R84952
Chlorobenzene	ND	0.16	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
Chloroethane	ND	0.38	2.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
Chloroform	ND	0.13	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
Chloromethane	0.46	0.41	3.0	J	µg/L	1	1/4/2022 12:14:34 PM	R84952
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
1,1-Dichloroethane	2.6	0.27	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
2-Hexanone	ND	1.8	10		µg/L	1	1/4/2022 12:14:34 PM	R84952
Isopropylbenzene	ND	0.18	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	1/4/2022 12:14:34 PM	R84952
Methylene Chloride	ND	0.50	3.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
n-Butylbenzene	ND	0.25	3.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
n-Propylbenzene	0.28	0.18	1.0	J	µg/L	1	1/4/2022 12:14:34 PM	R84952
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
Styrene	ND	0.14	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952
Vinyl chloride	ND	0.32	1.0		µg/L	1	1/4/2022 12:14:34 PM	R84952

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:05:00 AM
Lab ID: 2112E16-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	ND	0.37	1.5		µg/L	1	1/4/2022 12:14:34 PM	R84952
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	1	1/4/2022 12:14:34 PM	R84952
Surr: 4-Bromofluorobenzene	96.0	0	70-130		%Rec	1	1/4/2022 12:14:34 PM	R84952
Surr: Dibromofluoromethane	108	0	70-130		%Rec	1	1/4/2022 12:14:34 PM	R84952
Surr: Toluene-d8	103	0	70-130		%Rec	1	1/4/2022 12:14:34 PM	R84952
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	0.061	0.012	0.050		mg/L	1	1/4/2022 12:14:34 PM	G84952
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	1/4/2022 12:14:34 PM	G84952

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:05:00 AM
Lab ID: 2112E16-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.35	0.016	0.064		mg/L	1	1/3/2022 6:13:32 PM	64796
Motor Oil Range Organics (MRO)	0.23	0.052	0.080		mg/L	1	1/3/2022 6:13:32 PM	64796
Surr: DNOP	96.8	0	15-142		%Rec	1	1/3/2022 6:13:32 PM	64796

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:05:00 AM
Lab ID: 2112E16-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	5.0	50	D	µg/L	10	1/7/2022 5:12:34 PM	64785
Benzoic acid	ND	11	200	D	µg/L	10	1/7/2022 5:12:34 PM	64785
Benzyl alcohol	ND	6.8	50	D	µg/L	10	1/7/2022 5:12:34 PM	64785
Bis(2-ethylhexyl)phthalate	ND	45	100	D	µg/L	10	1/7/2022 5:12:34 PM	64785
Butyl benzyl phthalate	ND	7.4	50	D	µg/L	10	1/7/2022 5:12:34 PM	64785
Carbazole	ND	5.6	50	D	µg/L	10	1/7/2022 5:12:34 PM	64785
Di-n-octyl phthalate	ND	31	200	D	µg/L	10	1/7/2022 5:12:34 PM	64785
Dibenzofuran	ND	3.8	50	D	µg/L	10	1/7/2022 5:12:34 PM	64785
1,4-Dichlorobenzene	ND	7.0	50	D	µg/L	10	1/7/2022 5:12:34 PM	64785
Diethyl phthalate	ND	39	100	D	µg/L	10	1/7/2022 5:12:34 PM	64785
Dimethyl phthalate	ND	20	100	D	µg/L	10	1/7/2022 5:12:34 PM	64785
2,4-Dimethylphenol	ND	9.7	50	D	µg/L	10	1/7/2022 5:12:34 PM	64785
2-Methylphenol	ND	5.1	50	D	µg/L	10	1/7/2022 5:12:34 PM	64785
3+4-Methylphenol	ND	4.5	50	D	µg/L	10	1/7/2022 5:12:34 PM	64785
Phenol	ND	3.3	50	D	µg/L	10	1/7/2022 5:12:34 PM	64785
2,4,6-Trichlorophenol	ND	4.3	50	D	µg/L	10	1/7/2022 5:12:34 PM	64785
Surr: 2-Fluorophenol	0	0	15-87	SD	%Rec	10	1/7/2022 5:12:34 PM	64785
Surr: Phenol-d5	0	0	15-67.5	SD	%Rec	10	1/7/2022 5:12:34 PM	64785
Surr: 2,4,6-Tribromophenol	0	0	15-122	SD	%Rec	10	1/7/2022 5:12:34 PM	64785
Surr: Nitrobenzene-d5	0	0	15-103	SD	%Rec	10	1/7/2022 5:12:34 PM	64785
Surr: 2-Fluorobiphenyl	0	0	15-103	SD	%Rec	10	1/7/2022 5:12:34 PM	64785
Surr: 4-Terphenyl-d14	0	0	45-137	SD	%Rec	10	1/7/2022 5:12:34 PM	64785
EPA METHOD 8270SIM							Analyst: **TOM**	
1,4-Dioxane	ND	0.48	10	D	µg/L	10	12/30/2021 10:12:00 P	64771
Naphthalene	ND	0.34	1.0	D	µg/L	10	12/30/2021 10:12:00 P	64771
1-Methylnaphthalene	ND	0.24	1.0	D	µg/L	10	12/30/2021 10:12:00 P	64771
2-Methylnaphthalene	ND	0.34	1.0	D	µg/L	10	12/30/2021 10:12:00 P	64771
Acenaphthene	ND	0.31	1.0	D	µg/L	10	12/30/2021 10:12:00 P	64771
Fluorene	ND	0.31	1.0	D	µg/L	10	12/30/2021 10:12:00 P	64771
Phenanthrene	ND	0.57	1.0	D	µg/L	10	12/30/2021 10:12:00 P	64771
Anthracene	ND	0.34	1.0	D	µg/L	10	12/30/2021 10:12:00 P	64771
Pyrene	ND	1.6	2.0	D	µg/L	10	12/30/2021 10:12:00 P	64771
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	12/30/2021 10:12:00 P	64771
Chrysene	ND	0.24	1.0	D	µg/L	10	12/30/2021 10:12:00 P	64771
Surr: Nitrobenzene-d5	0	0	21.9-89.8	SD	%Rec	10	12/30/2021 10:12:00 P	64771
Surr: 2-Fluorobiphenyl	0	0	15-84.5	SD	%Rec	10	12/30/2021 10:12:00 P	64771
Surr: 4-Terphenyl-d14	0	0	73.1-152	SD	%Rec	10	12/30/2021 10:12:00 P	64771

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:05:00 AM
Lab ID: 2112E16-002E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	1.7	0.20	0.50		mg/L	5	12/29/2021 3:13:13 PM	R84860
Chloride	83	1.2	2.5		mg/L	5	12/29/2021 3:13:13 PM	R84860
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	12/29/2021 3:13:13 PM	R84860
Nitrogen, Nitrate (As N)	0.86	0.050	0.50		mg/L	5	12/29/2021 3:13:13 PM	R84860
Sulfate	46	1.2	2.5		mg/L	5	12/29/2021 3:13:13 PM	R84860

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:05:00 AM
Lab ID: 2112E16-002F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.28	0.0016	0.0030		mg/L	1	1/4/2022 10:54:13 AM	64812
Cadmium	ND	0.0015	0.0020		mg/L	1	1/4/2022 10:54:13 AM	64812
Chromium	0.0033	0.0021	0.0060	J	mg/L	1	1/4/2022 10:54:13 AM	64812
Iron	2.0	0.13	0.50	*	mg/L	10	1/4/2022 10:55:37 AM	64812
Manganese	0.055	0.00081	0.0020	*	mg/L	1	1/4/2022 10:54:13 AM	64812
Silver	ND	0.0013	0.0050		mg/L	1	1/4/2022 10:54:13 AM	64812
Zinc	0.055	0.0064	0.010		mg/L	1	1/4/2022 10:54:13 AM	64812
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0014	0.00013	0.0010		mg/L	1	1/4/2022 2:01:32 PM	64812
Copper	0.014	0.00040	0.0010		mg/L	1	1/4/2022 2:01:32 PM	64812
Lead	0.0027	0.000061	0.00050		mg/L	1	1/5/2022 4:06:24 PM	64812
Selenium	0.00051	0.00037	0.0010	J	mg/L	1	1/4/2022 2:01:32 PM	64812
Uranium	0.0014	0.000069	0.00050		mg/L	1	1/7/2022 12:40:39 PM	64812
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 6:01:59 PM	65003

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:05:00 AM
Lab ID: 2112E16-002G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.16	0.0011	0.0020		mg/L	1	12/29/2021 1:42:12 PM	B84839
Cadmium	ND	0.00098	0.0020		mg/L	1	12/29/2021 1:42:12 PM	B84839
Chromium	ND	0.0020	0.0060		mg/L	1	12/29/2021 1:42:12 PM	B84839
Iron	0.039	0.010	0.020		mg/L	1	12/29/2021 1:42:12 PM	B84839
Manganese	0.012	0.00058	0.0020		mg/L	1	12/29/2021 1:42:12 PM	B84839
Silver	ND	0.0013	0.0050		mg/L	1	12/29/2021 1:42:12 PM	B84839
Zinc	0.029	0.0032	0.010		mg/L	1	12/29/2021 1:42:12 PM	B84839
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00091	0.00012	0.0010	J	mg/L	1	1/3/2022 2:42:22 PM	B84912
Copper	0.0064	0.00037	0.0010		mg/L	1	1/3/2022 2:42:22 PM	B84912
Lead	0.000065	0.000057	0.00050	J	mg/L	1	1/4/2022 3:47:26 PM	A84953
Selenium	0.00049	0.00034	0.0010	J	mg/L	1	1/3/2022 2:42:22 PM	B84912
Uranium	0.0012	0.000065	0.00050		mg/L	1	1/4/2022 3:47:26 PM	A84953
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/13/2022 5:59:49 PM	65003

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:30:00 AM
Lab ID: 2112E16-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/29/2021 11:39:03 P	R84851
Toluene	ND	0.20	1.0		µg/L	1	12/29/2021 11:39:03 P	R84851
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/29/2021 11:39:03 P	R84851
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/29/2021 11:39:03 P	R84851
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/29/2021 11:39:03 P	R84851
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 11:39:03 P	R84851
Acetone	ND	2.5	10		µg/L	1	12/29/2021 11:39:03 P	R84851
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/29/2021 11:39:03 P	R84851
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/29/2021 11:39:03 P	R84851
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/29/2021 11:39:03 P	R84851
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	12/29/2021 11:39:03 P	R84851
Surr: 4-Bromofluorobenzene	99.8	0	70-130		%Rec	1	12/29/2021 11:39:03 P	R84851
Surr: Dibromofluoromethane	98.7	0	70-130		%Rec	1	12/29/2021 11:39:03 P	R84851
Surr: Toluene-d8	99.3	0	70-130		%Rec	1	12/29/2021 11:39:03 P	R84851
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/29/2021 11:39:03 P	G84851
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	12/29/2021 11:39:03 P	G84851

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:30:00 AM
Lab ID: 2112E16-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	ND	0.016	0.064		mg/L	1	12/30/2021 9:05:33 PM	64796
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/30/2021 9:05:33 PM	64796
Surr: DNOP	91.5	0	15-142		%Rec	1	12/30/2021 9:05:33 PM	64796

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:30:00 AM
Lab ID: 2112E16-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 5:54:15 PM	64785
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 5:54:15 PM	64785
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 5:54:15 PM	64785
Diethyl phthalate	ND	3.9	10		µg/L	1	1/7/2022 5:54:15 PM	64785
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 5:54:15 PM	64785
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/7/2022 5:54:15 PM	64785
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/7/2022 5:54:15 PM	64785
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/7/2022 5:54:15 PM	64785
Phenol	ND	0.33	5.0		µg/L	1	1/7/2022 5:54:15 PM	64785
Surr: 2-Fluorophenol	61.8	0	15-87		%Rec	1	1/7/2022 5:54:15 PM	64785
Surr: Phenol-d5	47.4	0	15-67.5		%Rec	1	1/7/2022 5:54:15 PM	64785
Surr: 2,4,6-Tribromophenol	72.9	0	15-122		%Rec	1	1/7/2022 5:54:15 PM	64785
Surr: Nitrobenzene-d5	69.3	0	15-103		%Rec	1	1/7/2022 5:54:15 PM	64785
Surr: 2-Fluorobiphenyl	72.2	0	15-103		%Rec	1	1/7/2022 5:54:15 PM	64785
Surr: 4-Terphenyl-d14	102	0	45-137		%Rec	1	1/7/2022 5:54:15 PM	64785
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	1/6/2022 7:42:00 PM	64805
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	1/6/2022 7:42:00 PM	64805
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	1/6/2022 7:42:00 PM	64805
Phenanthrene	ND	0.057	0.10		µg/L	1	1/6/2022 7:42:00 PM	64805
Surr: Nitrobenzene-d5	66.5	0	21.9-89.8		%Rec	1	1/6/2022 7:42:00 PM	64805
Surr: 2-Fluorobiphenyl	73.0	0	15-84.5		%Rec	1	1/6/2022 7:42:00 PM	64805
Surr: 4-Terphenyl-d14	119	0	73.1-152		%Rec	1	1/6/2022 7:42:00 PM	64805

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:30:00 AM
Lab ID: 2112E16-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Nitrogen, Nitrite (As N)	ND	0.0053	0.10		mg/L	1	12/29/2021 3:38:03 PM	R84860

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:30:00 AM
Lab ID: 2112E16-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.014	0.0016	0.0030		mg/L	1	1/4/2022 10:57:19 AM	64812
Cadmium	ND	0.0015	0.0020		mg/L	1	1/4/2022 10:57:19 AM	64812
Chromium	ND	0.0021	0.0060		mg/L	1	1/4/2022 10:57:19 AM	64812
Iron	0.17	0.013	0.050		mg/L	1	1/4/2022 10:57:19 AM	64812
Manganese	0.0051	0.00081	0.0020		mg/L	1	1/4/2022 10:57:19 AM	64812
Zinc	0.013	0.0064	0.010		mg/L	1	1/4/2022 10:57:19 AM	64812
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0014	0.00013	0.0010		mg/L	1	1/4/2022 2:03:58 PM	64812
Copper	ND	0.00040	0.0010		mg/L	1	1/4/2022 2:03:58 PM	64812
Lead	ND	0.000061	0.00050		mg/L	1	1/4/2022 2:03:58 PM	64812
Selenium	0.00093	0.00037	0.0010	J	mg/L	1	1/4/2022 2:03:58 PM	64812
Uranium	0.0015	0.000069	0.00050		mg/L	1	1/7/2022 12:43:06 PM	64812
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/14/2022 12:39:37 PM	65021

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:30:00 AM
Lab ID: 2112E16-003G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.014	0.0011	0.0020		mg/L	1	12/29/2021 1:45:30 PM	B84839
Cadmium	ND	0.00098	0.0020		mg/L	1	12/29/2021 1:45:30 PM	B84839
Chromium	ND	0.0020	0.0060		mg/L	1	12/29/2021 1:45:30 PM	B84839
Iron	0.16	0.010	0.020		mg/L	1	12/29/2021 1:45:30 PM	B84839
Manganese	0.0052	0.00058	0.0020		mg/L	1	12/29/2021 1:45:30 PM	B84839
Zinc	0.019	0.0032	0.010		mg/L	1	12/29/2021 1:45:30 PM	B84839
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.0011	0.00061	0.0050	J	mg/L	5	1/4/2022 3:55:30 PM	A84953
Copper	ND	0.0018	0.0050		mg/L	5	1/4/2022 3:55:30 PM	A84953
Lead	ND	0.00028	0.0025		mg/L	5	1/4/2022 3:55:30 PM	A84953
Selenium	ND	0.0017	0.0050		mg/L	5	1/4/2022 3:55:30 PM	A84953
Uranium	0.0017	0.00033	0.0025	J	mg/L	5	1/4/2022 3:55:30 PM	A84953

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: PW-4
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 9:30:00 AM
Lab ID: 2112E16-003H
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	5.00	5.00		ug/L	1	1/2/2022 12:17:00 PM	R85277

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-8
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 10:00:00 AM
Lab ID: 2112E16-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.45	2.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
Toluene	ND	0.40	2.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
Ethylbenzene	ND	0.43	2.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
Methyl tert-butyl ether (MTBE)	ND	0.79	2.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
1,2,4-Trimethylbenzene	1.8	0.24	2.0	JP	µg/L	2	12/30/2021 2:29:56 AM	R84851
1,3,5-Trimethylbenzene	ND	0.36	2.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
Naphthalene	ND	1.0	4.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
1-Methylnaphthalene	ND	1.7	8.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
2-Methylnaphthalene	ND	1.4	8.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
Acetone	120	5.0	20	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
Bromomethane	4.0	1.7	6.0	JP	µg/L	2	12/30/2021 2:29:56 AM	R84851
2-Butanone	13	4.1	20	JP	µg/L	2	12/30/2021 2:29:56 AM	R84851
Carbon disulfide	2.9	1.2	20	JP	µg/L	2	12/30/2021 2:29:56 AM	R84851
Chloroform	ND	0.27	2.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
Chloromethane	62	0.82	6.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
Isopropylbenzene	ND	0.37	2.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
4-Isopropyltoluene	ND	0.40	2.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
4-Methyl-2-pentanone	ND	1.8	20	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
Methylene Chloride	ND	1.0	6.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
n-Butylbenzene	ND	0.51	6.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
n-Propylbenzene	ND	0.36	2.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
sec-Butylbenzene	ND	0.29	2.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
Xylenes, Total	ND	0.74	3.0	P	µg/L	2	12/30/2021 2:29:56 AM	R84851
Surr: 1,2-Dichloroethane-d4	111	0	70-130	P	%Rec	2	12/30/2021 2:29:56 AM	R84851
Surr: 4-Bromofluorobenzene	103	0	70-130	P	%Rec	2	12/30/2021 2:29:56 AM	R84851
Surr: Dibromofluoromethane	99.5	0	70-130	P	%Rec	2	12/30/2021 2:29:56 AM	R84851
Surr: Toluene-d8	100	0	70-130	P	%Rec	2	12/30/2021 2:29:56 AM	R84851

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-8
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 10:00:00 AM
Lab ID: 2112E16-004B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: **AG**	
Biochemical Oxygen Demand	51	2.0	2.0		mg/L	1	1/3/2022 12:12:00 PM	64772

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-8
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 10:00:00 AM
Lab ID: 2112E16-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **SMS**	
Total Coliform	<10	10.00	10.00		MPN/100	10	12/29/2021 5:27:00 PM	64765
E. Coli	<10	10.00	10.00		MPN/100	10	12/29/2021 5:27:00 PM	64765

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-8
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 10:00:00 AM
Lab ID: 2112E16-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	5.0	50	D	µg/L	10	1/7/2022 6:35:41 PM	64785
Benzoic acid	ND	11	200	D	µg/L	10	1/7/2022 6:35:41 PM	64785
Benzyl alcohol	ND	6.8	50	D	µg/L	10	1/7/2022 6:35:41 PM	64785
Bis(2-ethylhexyl)phthalate	ND	45	100	D	µg/L	10	1/7/2022 6:35:41 PM	64785
Carbazole	ND	5.6	50	D	µg/L	10	1/7/2022 6:35:41 PM	64785
Di-n-octyl phthalate	ND	31	200	D	µg/L	10	1/7/2022 6:35:41 PM	64785
Diethyl phthalate	ND	39	100	D	µg/L	10	1/7/2022 6:35:41 PM	64785
Dimethyl phthalate	ND	20	100	D	µg/L	10	1/7/2022 6:35:41 PM	64785
2,4-Dimethylphenol	ND	9.7	50	D	µg/L	10	1/7/2022 6:35:41 PM	64785
2-Methylphenol	ND	5.1	50	D	µg/L	10	1/7/2022 6:35:41 PM	64785
3+4-Methylphenol	ND	4.5	50	D	µg/L	10	1/7/2022 6:35:41 PM	64785
2-Nitrophenol	ND	4.7	50	D	µg/L	10	1/7/2022 6:35:41 PM	64785
4-Nitrophenol	ND	2.8	50	D	µg/L	10	1/7/2022 6:35:41 PM	64785
Phenol	ND	3.3	50	D	µg/L	10	1/7/2022 6:35:41 PM	64785
Pyridine	ND	400	400	ED	µg/L	10	1/7/2022 6:35:41 PM	64785
Surr: 2-Fluorophenol	0	0	15-87	SD	%Rec	10	1/7/2022 6:35:41 PM	64785
Surr: Phenol-d5	0	0	15-67.5	SD	%Rec	10	1/7/2022 6:35:41 PM	64785
Surr: 2,4,6-Tribromophenol	0	0	15-122	SD	%Rec	10	1/7/2022 6:35:41 PM	64785
Surr: Nitrobenzene-d5	0	0	15-103	SD	%Rec	10	1/7/2022 6:35:41 PM	64785
Surr: 2-Fluorobiphenyl	0	0	15-103	SD	%Rec	10	1/7/2022 6:35:41 PM	64785
Surr: 4-Terphenyl-d14	0	0	45-137	SD	%Rec	10	1/7/2022 6:35:41 PM	64785
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	1/12/2022 11:36:00 AM	64771
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	1/12/2022 11:36:00 AM	64771
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	1/12/2022 11:36:00 AM	64771
Fluorene	ND	0.031	0.10		µg/L	1	1/12/2022 11:36:00 AM	64771
Phenanthrene	ND	0.057	0.10		µg/L	1	1/12/2022 11:36:00 AM	64771
Fluoranthene	ND	0.10	0.20		µg/L	1	1/12/2022 11:36:00 AM	64771
Pyrene	ND	0.16	0.20		µg/L	1	1/12/2022 11:36:00 AM	64771
Chrysene	ND	0.024	0.10		µg/L	1	1/12/2022 11:36:00 AM	64771
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	1/12/2022 11:36:00 AM	64771
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	1/12/2022 11:36:00 AM	64771
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	1/12/2022 11:36:00 AM	64771
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	1/12/2022 11:36:00 AM	64771
Surr: Nitrobenzene-d5	89.0	0	21.9-89.8		%Rec	1	1/12/2022 11:36:00 AM	64771
Surr: 2-Fluorobiphenyl	76.5	0	15-84.5		%Rec	1	1/12/2022 11:36:00 AM	64771
Surr: 4-Terphenyl-d14	114	0	73.1-152		%Rec	1	1/12/2022 11:36:00 AM	64771

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-8
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 10:00:00 AM
Lab ID: 2112E16-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	30	4.0	10	*	mg/L	100	12/29/2021 4:02:52 PM	R84860
Chloride	220000	5000	10000	*	mg/L	2E+	1/10/2022 8:38:24 PM	R85057
Nitrogen, Nitrite (As N)	ND	5.3	100		mg/L	1E+	12/29/2021 4:15:17 PM	R84860
Bromide	520	50	100		mg/L	1E+	12/29/2021 4:15:17 PM	R84860
Nitrogen, Nitrate (As N)	ND	1.0	10		mg/L	100	12/29/2021 4:02:52 PM	R84860
Sulfate	37000	250	500	*	mg/L	1E+	12/29/2021 4:15:17 PM	R84860

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-8
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 10:00:00 AM
Lab ID: 2112E16-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.082	0.15		mg/L	50	1/4/2022 11:00:36 AM	64812
Cadmium	ND	0.074	0.10		mg/L	50	1/4/2022 11:00:36 AM	64812
Chromium	ND	0.11	0.30		mg/L	50	1/4/2022 11:00:36 AM	64812
Iron	0.78	0.64	2.5	J*	mg/L	50	1/4/2022 11:00:36 AM	64812
Manganese	15	0.041	0.10	*	mg/L	50	1/4/2022 11:00:36 AM	64812
Silver	ND	0.063	0.25		mg/L	50	1/4/2022 11:00:36 AM	64812
Zinc	ND	0.32	0.50		mg/L	50	1/4/2022 11:00:36 AM	64812
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	1.7	0.013	0.10	*	mg/L	100	1/5/2022 4:11:17 PM	64812
Copper	ND	0.040	0.10		mg/L	100	1/5/2022 4:11:17 PM	64812
Lead	0.0067	0.0061	0.050	J	mg/L	100	1/5/2022 4:11:17 PM	64812
Selenium	0.076	0.037	0.10	J*	mg/L	100	1/5/2022 4:11:17 PM	64812
Uranium	0.033	0.0069	0.050	J*	mg/L	100	1/7/2022 12:45:32 PM	64812
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/14/2022 12:41:49 PM	65021

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-8
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 10:00:00 AM
Lab ID: 2112E16-004G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	ND	0.056	0.10		mg/L	50	12/29/2021 2:20:33 PM	B84839
Cadmium	ND	0.049	0.10		mg/L	50	12/29/2021 2:20:33 PM	B84839
Chromium	ND	0.098	0.30		mg/L	50	12/29/2021 2:20:33 PM	B84839
Iron	ND	0.21	0.40		mg/L	20	12/29/2021 2:18:55 PM	B84839
Manganese	16	0.029	0.10	*	mg/L	50	12/29/2021 2:20:33 PM	B84839
Silver	ND	0.063	0.25		mg/L	50	12/29/2021 2:20:33 PM	B84839
Zinc	ND	0.16	0.50		mg/L	50	12/29/2021 2:20:33 PM	B84839
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	1.6	0.012	0.10	*	mg/L	100	1/4/2022 3:58:11 PM	A84953
Copper	ND	0.037	0.10		mg/L	100	1/4/2022 3:58:11 PM	A84953
Lead	ND	0.0057	0.050		mg/L	100	1/4/2022 3:58:11 PM	A84953
Selenium	ND	0.034	0.10		mg/L	100	1/4/2022 3:58:11 PM	A84953
Uranium	0.030	0.0065	0.050	J*	mg/L	100	1/4/2022 3:58:11 PM	A84953

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EP-8
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 10:00:00 AM
Lab ID: 2112E16-004H
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 410.4: COD							Analyst: **PAC**	
Chemical Oxygen Demand	12600000	2000000	2000000		ug/L	1E+	12/31/2021 9:34:00 AM	R85277

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 10:00:00 AM
Lab ID: 2112E16-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
Toluene	ND	0.20	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
Naphthalene	ND	0.50	2.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
Acetone	3.5	2.5	10	J	µg/L	1	12/30/2021 2:58:22 AM	R84851
Bromomethane	ND	0.85	3.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
2-Butanone	ND	2.0	10		µg/L	1	12/30/2021 2:58:22 AM	R84851
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
Chloroethane	ND	0.38	2.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
Chloroform	ND	0.13	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
Chloromethane	0.74	0.41	3.0	J	µg/L	1	12/30/2021 2:58:22 AM	R84851
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
2-Hexanone	ND	1.8	10		µg/L	1	12/30/2021 2:58:22 AM	R84851
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/30/2021 2:58:22 AM	R84851
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
Styrene	ND	0.14	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/30/2021 2:58:22 AM	R84851

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021 10:00:00 AM
Lab ID: 2112E16-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/30/2021 2:58:22 AM	R84851
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	12/30/2021 2:58:22 AM	R84851
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	12/30/2021 2:58:22 AM	R84851
Surr: Dibromofluoromethane	98.1	0	70-130		%Rec	1	12/30/2021 2:58:22 AM	R84851
Surr: Toluene-d8	102	0	70-130		%Rec	1	12/30/2021 2:58:22 AM	R84851
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/30/2021 2:58:22 AM	G84851
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	12/30/2021 2:58:22 AM	G84851

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Estimated value
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021
Lab ID: 2112E16-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/30/2021 3:26:48 AM	R84851
Toluene	ND	0.20	1.0		µg/L	1	12/30/2021 3:26:48 AM	R84851
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/30/2021 3:26:48 AM	R84851
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/30/2021 3:26:48 AM	R84851
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/30/2021 3:26:48 AM	R84851
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/30/2021 3:26:48 AM	R84851
Acetone	ND	2.5	10		µg/L	1	12/30/2021 3:26:48 AM	R84851
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/30/2021 3:26:48 AM	R84851
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/30/2021 3:26:48 AM	R84851
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/30/2021 3:26:48 AM	R84851
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	12/30/2021 3:26:48 AM	R84851
Surr: 4-Bromofluorobenzene	99.3	0	70-130		%Rec	1	12/30/2021 3:26:48 AM	R84851
Surr: Dibromofluoromethane	98.4	0	70-130		%Rec	1	12/30/2021 3:26:48 AM	R84851
Surr: Toluene-d8	102	0	70-130		%Rec	1	12/30/2021 3:26:48 AM	R84851
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/30/2021 3:26:48 AM	G84851
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	12/30/2021 3:26:48 AM	G84851

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021
Lab ID: 2112E16-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	ND	0.016	0.064		mg/L	1	12/30/2021 9:29:09 PM	64796
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	12/30/2021 9:29:09 PM	64796
Surr: DNOP	86.2	0	15-142		%Rec	1	12/30/2021 9:29:09 PM	64796

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021
Lab ID: 2112E16-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Benzoic acid	ND	1.1	20		µg/L	1	1/7/2022 7:17:11 PM	64785
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	1/7/2022 7:17:11 PM	64785
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	1/7/2022 7:17:11 PM	64785
Diethyl phthalate	ND	3.9	10		µg/L	1	1/7/2022 7:17:11 PM	64785
Dimethyl phthalate	ND	2.0	10		µg/L	1	1/7/2022 7:17:11 PM	64785
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	1/7/2022 7:17:11 PM	64785
2-Methylphenol	ND	0.51	5.0		µg/L	1	1/7/2022 7:17:11 PM	64785
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	1/7/2022 7:17:11 PM	64785
Phenol	ND	0.33	5.0		µg/L	1	1/7/2022 7:17:11 PM	64785
Surr: 2-Fluorophenol	69.2	0	15-87		%Rec	1	1/7/2022 7:17:11 PM	64785
Surr: Phenol-d5	51.9	0	15-67.5		%Rec	1	1/7/2022 7:17:11 PM	64785
Surr: 2,4,6-Tribromophenol	73.0	0	15-122		%Rec	1	1/7/2022 7:17:11 PM	64785
Surr: Nitrobenzene-d5	73.0	0	15-103		%Rec	1	1/7/2022 7:17:11 PM	64785
Surr: 2-Fluorobiphenyl	74.8	0	15-103		%Rec	1	1/7/2022 7:17:11 PM	64785
Surr: 4-Terphenyl-d14	100	0	45-137		%Rec	1	1/7/2022 7:17:11 PM	64785
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	1/6/2022 8:27:00 PM	64805
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	1/6/2022 8:27:00 PM	64805
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	1/6/2022 8:27:00 PM	64805
Phenanthrene	ND	0.057	0.10		µg/L	1	1/6/2022 8:27:00 PM	64805
Surr: Nitrobenzene-d5	64.0	0	21.9-89.8		%Rec	1	1/6/2022 8:27:00 PM	64805
Surr: 2-Fluorobiphenyl	66.5	0	15-84.5		%Rec	1	1/6/2022 8:27:00 PM	64805
Surr: 4-Terphenyl-d14	114	0	73.1-152		%Rec	1	1/6/2022 8:27:00 PM	64805

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021
Lab ID: 2112E16-006E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Nitrogen, Nitrite (As N)	ND	0.0053	0.10		mg/L	1	12/29/2021 4:27:41 PM	R84860

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021
Lab ID: 2112E16-006F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.014	0.0016	0.0030		mg/L	1	1/4/2022 11:03:55 AM	64812
Cadmium	ND	0.0015	0.0020		mg/L	1	1/4/2022 11:03:55 AM	64812
Chromium	ND	0.0021	0.0060		mg/L	1	1/4/2022 11:03:55 AM	64812
Iron	0.18	0.013	0.050		mg/L	1	1/4/2022 11:03:55 AM	64812
Manganese	0.0050	0.00081	0.0020		mg/L	1	1/4/2022 11:03:55 AM	64812
Zinc	0.011	0.0064	0.010		mg/L	1	1/4/2022 11:03:55 AM	64812
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.0013	0.00013	0.0010		mg/L	1	1/4/2022 2:08:50 PM	64812
Copper	ND	0.00040	0.0010		mg/L	1	1/4/2022 2:08:50 PM	64812
Lead	ND	0.000061	0.00050		mg/L	1	1/4/2022 2:08:50 PM	64812
Selenium	0.00079	0.00037	0.0010	J	mg/L	1	1/4/2022 2:08:50 PM	64812
Uranium	0.0014	0.000069	0.00050		mg/L	1	1/7/2022 12:47:59 PM	64812
EPA METHOD 245.1: MERCURY							Analyst: **VP**	
Mercury	ND	0.00012	0.00020		mg/L	1	1/14/2022 12:43:59 PM	65021

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021
Lab ID: 2112E16-006G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Barium	0.014	0.0011	0.0020		mg/L	1	12/29/2021 1:52:05 PM	B84839
Cadmium	ND	0.00098	0.0020		mg/L	1	12/29/2021 1:52:05 PM	B84839
Chromium	ND	0.0020	0.0060		mg/L	1	12/29/2021 1:52:05 PM	B84839
Iron	0.16	0.010	0.020		mg/L	1	12/29/2021 1:52:05 PM	B84839
Manganese	0.0052	0.00058	0.0020		mg/L	1	12/29/2021 1:52:05 PM	B84839
Zinc	0.017	0.0032	0.010		mg/L	1	12/29/2021 1:52:05 PM	B84839
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Arsenic	0.00094	0.00061	0.0050	J	mg/L	5	1/4/2022 4:06:15 PM	A84953
Copper	ND	0.0018	0.0050		mg/L	5	1/4/2022 4:06:15 PM	A84953
Lead	ND	0.00028	0.0025		mg/L	5	1/4/2022 4:06:15 PM	A84953
Selenium	ND	0.0017	0.0050		mg/L	5	1/4/2022 4:06:15 PM	A84953
Uranium	0.0014	0.00033	0.0025	J	mg/L	5	1/4/2022 4:06:15 PM	A84953

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-12-28-21
Project: 2021 GW Sampling 4th Quarter
Collection Date: 12/28/2021
Lab ID: 2112E16-006H
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: **PAC**	
Cyanide	ND	5.00	5.00		ug/L	1	1/11/2022 4:43:00 PM	R85277

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2112E16-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Benzene	ND	0.23	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
Toluene	ND	0.20	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
Ethylbenzene	ND	0.21	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
Naphthalene	ND	0.50	2.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
Acetone	ND	2.5	10		µg/L	1	12/30/2021 3:55:13 AM	R84851
Bromomethane	ND	0.85	3.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
2-Butanone	ND	2.0	10		µg/L	1	12/30/2021 3:55:13 AM	R84851
Chlorobenzene	ND	0.16	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
Chloroethane	ND	0.38	2.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
Chloroform	ND	0.13	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
Chloromethane	0.47	0.41	3.0	J	µg/L	1	12/30/2021 3:55:13 AM	R84851
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
2-Hexanone	ND	1.8	10		µg/L	1	12/30/2021 3:55:13 AM	R84851
Isopropylbenzene	ND	0.18	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	12/30/2021 3:55:13 AM	R84851
Methylene Chloride	ND	0.50	3.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
n-Butylbenzene	ND	0.25	3.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
n-Propylbenzene	ND	0.18	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
Styrene	ND	0.14	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851
Vinyl chloride	ND	0.32	1.0		µg/L	1	12/30/2021 3:55:13 AM	R84851

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order: **2112E16**
Date Reported: **1/25/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 4th Quarter
Collection Date:
Lab ID: 2112E16-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JR**	
Xylenes, Total	ND	0.37	1.5		µg/L	1	12/30/2021 3:55:13 AM	R84851
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	12/30/2021 3:55:13 AM	R84851
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	12/30/2021 3:55:13 AM	R84851
Surr: Dibromofluoromethane	97.6	0	70-130		%Rec	1	12/30/2021 3:55:13 AM	R84851
Surr: Toluene-d8	100	0	70-130		%Rec	1	12/30/2021 3:55:13 AM	R84851
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **JR**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	12/30/2021 3:55:13 AM	G84851
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	12/30/2021 3:55:13 AM	G84851

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Pace Analytical®

ANALYTICAL REPORT

January 12, 2022

Hall Environmental Analysis Laboratory

Sample Delivery Group:	L1446725
Samples Received:	12/30/2021
Project Number:	2112E16
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By: John V Hawkins

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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2112E16-003H PW-4 L1446725-01 WW

			Collected by	Collected date/time	Received date/time	
				12/28/21 09:30	12/30/21 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1796773	1	12/30/21 17:53	01/02/22 12:17	MCG	Mt. Juliet, TN

2112E16-003H EP-8 L1446725-02 WW

			Collected by	Collected date/time	Received date/time	
				12/28/21 10:00	12/30/21 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 410.4	WG1796965	100	12/31/21 09:34	12/31/21 14:56	ARM	Mt. Juliet, TN

2112E16-006H DUP-12-28-21 L1446725-03 WW

			Collected by	Collected date/time	Received date/time	
				12/28/21 00:00	12/30/21 08:45	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1797070	1	01/01/22 20:30	01/11/22 16:43	LDT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Cyanide	ND		5.00	1	01/02/2022 12:17	WG1796773

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
COD	12600000		2000000	100	12/31/2021 14:56	WG1796965

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Cyanide	ND		5.00	1	01/11/2022 16:43	WG1797070

Method Blank (MB)

(MB) R3746617-1 12/31/21 14:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
COD	U		11700	20000

L1446730-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1446730-02 12/31/21 14:56 • (DUP) R3746617-5 12/31/21 14:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
COD	472000	473000	1	0.197		20

L1446740-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1446740-01 12/31/21 14:59 • (DUP) R3746617-6 12/31/21 14:59

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
COD	ND	ND	1	6.10		20

Laboratory Control Sample (LCS)

(LCS) R3746617-2 12/31/21 14:54

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
COD	500000	505000	101	90.0-110	

L1444136-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1444136-03 12/31/21 14:54 • (MS) R3746617-3 12/31/21 14:54 • (MSD) R3746617-4 12/31/21 14:55

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
COD	500000	ND	506000	502000	101	100	1	80.0-120			0.724	20

Method Blank (MB)

(MB) R3746695-1 01/02/22 11:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Cyanide	U		1.80	5.00

L1446325-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1446325-01 01/02/22 11:56 • (DUP) R3746695-5 01/02/22 11:57

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	200	P1	20

L1446388-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1446388-07 01/02/22 12:01 • (DUP) R3746695-6 01/02/22 12:02

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	200	P1	20

Laboratory Control Sample (LCS)

(LCS) R3746695-2 01/02/22 11:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	100	102	102	87.1-120	

L1446266-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1446266-01 01/02/22 11:46 • (MS) R3746695-3 01/02/22 11:48 • (MSD) R3746695-4 01/02/22 11:49

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	ND	98.4	93.7	98.4	93.7	1	90.0-110			4.89	20

L1446603-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1446603-01 01/02/22 12:08 • (MS) R3746695-7 01/02/22 12:09 • (MSD) R3746695-8 01/02/22 12:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	ND	94.7	92.5	94.7	92.5	1	90.0-110			2.35	20

Method Blank (MB)

(MB) R3748982-1 01/11/22 16:27

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Cyanide	U		1.80	5.00

L1446620-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1446620-02 01/11/22 16:31 • (DUP) R3748982-3 01/11/22 16:32

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	9.11		20

L1446747-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1446747-01 01/11/22 16:46 • (DUP) R3748982-6 01/11/22 16:47

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3748982-2 01/11/22 16:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	100	106	106	87.1-120	

L1446725-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1446725-03 01/11/22 16:43 • (MS) R3748982-4 01/11/22 16:44 • (MSD) R3748982-5 01/11/22 16:45

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	ND	101	90.1	101	90.1	1	90.0-110			11.4	20

L1447010-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1447010-03 01/11/22 16:56 • (MS) R3748982-7 01/11/22 16:57 • (MSD) R3748982-8 01/11/22 16:58

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	100	ND	99.9	103	99.9	103	1	90.0-110			3.06	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

H008

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2112E16-003H	PW-4	500AMBHDP E-NAOH	Aqueous	12/28/2021 9:30:00 AM	1	Total Cyanide RCV 12 01
2	2112E16-004H	EP-8	500HDPEH2 SO4	Aqueous	12/28/2021 10:00:00 AM	1	COD 2 02
3	2112E16-006H	DUP-12-28-21	500AMBHDP E-NAOH	Aqueous	12/28/2021	1	Total Cyanide RCV 12 03

Sample Receipt Checklist

COC Seal Present/Intact: ✓Y__N
COC Signed/Accurate: ✓Y__N
Bottles arrive intact: ✓Y__N
Correct bottles used: ✓Y__N
Sufficient volume sent: ✓Y__N
RAD Screen <0.5 mR/hr: __Y__N

If Applicable
VOA Zero Headspace: __Y__N
Pres.Correct/Check: __Y__N

3.6+0=3.6.

SPECIAL INSTRUCTIONS / COMMENTS: 5528 5948 0128 cnt=3 TB=0.

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: TDB	Date: 12/28/2021	Time: 4:05 PM	Received By: T. Robertson	Date: 12/30/21	Time: 845
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ✓ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples _____ °C Attempt to Cool ? _____
Comments: _____

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64812** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **64812** RunNo: **84934**
Prep Date: **1/3/2022** Analysis Date: **1/4/2022** SeqNo: **2987798** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS-64812** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **64812** RunNo: **84934**
Prep Date: **1/3/2022** Analysis Date: **1/4/2022** SeqNo: **2987800** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0022	0.0030	0.002000	0	108	50	150			J
Cadmium	0.0021	0.0020	0.002000	0	106	50	150			
Chromium	0.0056	0.0060	0.006000	0	92.5	50	150			J
Iron	0.022	0.050	0.02000	0	110	50	150			J
Manganese	0.0023	0.0020	0.002000	0	116	50	150			
Silver	0.0053	0.0050	0.005000	0	105	50	150			
Zinc	0.011	0.010	0.01000	0	111	50	150			

Sample ID: **LCS-64812** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **64812** RunNo: **84934**
Prep Date: **1/3/2022** Analysis Date: **1/4/2022** SeqNo: **2987803** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0030	0.5000	0	105	85	115			
Cadmium	0.53	0.0020	0.5000	0	106	85	115			
Chromium	0.52	0.0060	0.5000	0	104	85	115			
Iron	0.53	0.050	0.5000	0	107	85	115			
Manganese	0.52	0.0020	0.5000	0	104	85	115			
Silver	0.11	0.0050	0.1000	0	107	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984466** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984467** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	90.2	50	150			J
Cadmium	0.0017	0.0020	0.002000	0	83.5	50	150			J
Chromium	0.0064	0.0060	0.006000	0	106	50	150			
Iron	0.023	0.020	0.02000	0	114	50	150			
Manganese	0.0022	0.0020	0.002000	0	112	50	150			
Silver	0.0052	0.0050	0.005000	0	103	50	150			
Zinc	0.011	0.010	0.01000	0	109	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984468** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	101	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	100	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	98.9	85	115			
Silver	0.10	0.0050	0.1000	0	99.8	85	115			
Zinc	0.50	0.010	0.5000	0	99.1	85	115			

Sample ID: **2112E16-001GMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-12-28-21** Batch ID: **B84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984502** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **2112E16-001GMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-12-28-21** Batch ID: **B84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984502** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.52	0.0020	0.5000	0	105	70	130			
Chromium	0.52	0.0060	0.5000	0	103	70	130			
Iron	0.51	0.020	0.5000	0	103	70	130			
Manganese	0.50	0.0020	0.5000	0	99.5	70	130			
Silver	0.10	0.0050	0.1000	0	103	70	130			
Zinc	0.52	0.010	0.5000	0.004627	104	70	130			

Sample ID: **2112E16-001GMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB-12-28-21** Batch ID: **B84839** RunNo: **84839**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984503** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0020	0.5000	0	105	70	130	1.14	20	
Cadmium	0.53	0.0020	0.5000	0	106	70	130	1.40	20	
Chromium	0.52	0.0060	0.5000	0	105	70	130	1.25	20	
Iron	0.52	0.020	0.5000	0	103	70	130	0.145	20	
Manganese	0.50	0.0020	0.5000	0	101	70	130	1.52	20	
Silver	0.10	0.0050	0.1000	0	104	70	130	1.14	20	
Zinc	0.53	0.010	0.5000	0.004627	104	70	130	0.547	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64812** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **64812** RunNo: **84923**
Prep Date: **1/3/2022** Analysis Date: **1/4/2022** SeqNo: **2987520** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID: **MSLLLCS-64812** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **64812** RunNo: **84923**
Prep Date: **1/3/2022** Analysis Date: **1/4/2022** SeqNo: **2987521** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00090	0.0010	0.001000	0	89.8	50	150			J
Copper	0.00097	0.0010	0.001000	0	96.9	50	150			J
Lead	0.00049	0.00050	0.0005000	0	98.7	50	150			J
Selenium	0.00088	0.0010	0.001000	0	88.2	50	150			J
Uranium	0.00051	0.00050	0.0005000	0	101	50	150			

Sample ID: **MSLCS-64812** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **64812** RunNo: **84923**
Prep Date: **1/3/2022** Analysis Date: **1/4/2022** SeqNo: **2987522** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115			
Copper	0.025	0.0010	0.02500	0	99.2	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.025	0.0010	0.02500	0	98.2	85	115			
Uranium	0.013	0.00050	0.01250	0	106	85	115			

Sample ID: **2112E16-001FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **EB-12-28-21** Batch ID: **64812** RunNo: **84923**
Prep Date: **1/3/2022** Analysis Date: **1/4/2022** SeqNo: **2988642** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.7	70	130			
Copper	0.024	0.0010	0.02500	0	97.0	70	130			
Selenium	0.026	0.0010	0.02500	0	104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **A84953** RunNo: **84953**
Prep Date: Analysis Date: **1/4/2022** SeqNo: **2989080** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **A84953** RunNo: **84953**
Prep Date: Analysis Date: **1/4/2022** SeqNo: **2989081** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	100	50	150			
Copper	0.0011	0.0010	0.001000	0	110	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.00096	0.0010	0.001000	0	96.2	50	150			J
Uranium	0.00049	0.00050	0.0005000	0	98.9	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **A84953** RunNo: **84953**
Prep Date: Analysis Date: **1/4/2022** SeqNo: **2989083** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.5	85	115			
Copper	0.024	0.0010	0.02500	0	97.6	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.024	0.0010	0.02500	0	96.1	85	115			
Uranium	0.013	0.00050	0.01250	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **A84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986042** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986043** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00091	0.0010	0.001000	0	91.2	50	150			J
Copper	0.00096	0.0010	0.001000	0	96.2	50	150			J
Lead	0.00048	0.00050	0.0005000	0	96.7	50	150			J
Selenium	0.0010	0.0010	0.001000	0	99.8	50	150			J
Uranium	0.00048	0.00050	0.0005000	0	95.2	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986044** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Copper	0.025	0.0010	0.02500	0	99.8	85	115			
Lead	0.012	0.00050	0.01250	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	96.6	85	115			
Uranium	0.012	0.00050	0.01250	0	95.3	85	115			

Sample ID: **2112E16-001GMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB-12-28-21** Batch ID: **A84886** RunNo: **84886**
Prep Date: Analysis Date: **12/30/2021** SeqNo: **2986140** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	96.4	70	130			
Copper	0.024	0.0010	0.02500	0	96.3	70	130			
Lead	0.012	0.00050	0.01250	0	95.5	70	130			
Selenium	0.024	0.0010	0.02500	0	94.7	70	130			
Uranium	0.012	0.00050	0.01250	0.0003766	94.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B84912** RunNo: **84912**
Prep Date: Analysis Date: **1/3/2022** SeqNo: **2987126** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B84912** RunNo: **84912**
Prep Date: Analysis Date: **1/3/2022** SeqNo: **2987127** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	106	50	150			
Copper	0.00099	0.0010	0.001000	0	99.1	50	150			J
Selenium	0.0012	0.0010	0.001000	0	119	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B84912** RunNo: **84912**
Prep Date: Analysis Date: **1/3/2022** SeqNo: **2987128** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.023	0.0010	0.02500	0	90.5	85	115			
Copper	0.025	0.0010	0.02500	0	98.2	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID: **2112E16-002GMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-16** Batch ID: **A84953** RunNo: **84953**
Prep Date: Analysis Date: **1/4/2022** SeqNo: **2989086** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	.00006493	93.4	70	130			
Uranium	0.013	0.00050	0.01250	0.001158	95.6	70	130			

Sample ID: **2112E16-002GMSDL** SampType: **MSD** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **MKTF-16** Batch ID: **A84953** RunNo: **84953**
Prep Date: Analysis Date: **1/4/2022** SeqNo: **2989087** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	.00006493	98.6	70	130	5.40	20	
Uranium	0.014	0.00050	0.01250	0.001158	102	70	130	6.02	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-65003** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **65003** RunNo: **85151**
Prep Date: **1/13/2022** Analysis Date: **1/13/2022** SeqNo: **2995628** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-65003** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **65003** RunNo: **85151**
Prep Date: **1/13/2022** Analysis Date: **1/13/2022** SeqNo: **2995629** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.000081	0.00020	0.0001500	0	54.3	50	150			J

Sample ID: **LCS-65003** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **65003** RunNo: **85151**
Prep Date: **1/13/2022** Analysis Date: **1/13/2022** SeqNo: **2995630** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	103	85	115			

Sample ID: **MB-65021** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **65021** RunNo: **85170**
Prep Date: **1/14/2022** Analysis Date: **1/14/2022** SeqNo: **2996280** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCS-65021** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **65021** RunNo: **85170**
Prep Date: **1/14/2022** Analysis Date: **1/14/2022** SeqNo: **2996282** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	106	85	115			

Sample ID: **LCSLL-65021** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **65021** RunNo: **85170**
Prep Date: **1/14/2022** Analysis Date: **1/14/2022** SeqNo: **2996309** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.000096	0.00020	0.0001500	0	63.7	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R84860** RunNo: **84860**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2985142** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	0.50								

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R84860** RunNo: **84860**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2985143** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.3	90	110			
Chloride	4.9	0.50	5.000	0	97.5	90	110			
Nitrogen, Nitrite (As N)	0.99	0.10	1.000	0	99.3	90	110			
Bromide	2.5	0.10	2.500	0	101	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	105	90	110			
Sulfate	9.7	0.50	10.00	0	97.3	90	110			

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R85057** RunNo: **85057**
Prep Date: Analysis Date: **1/10/2022** SeqNo: **2992629** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R85057** RunNo: **85057**
Prep Date: Analysis Date: **1/10/2022** SeqNo: **2992630** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	92.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64796** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **64796** RunNo: **84889**
Prep Date: **12/30/2021** Analysis Date: **12/30/2021** SeqNo: **2986331** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.017	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.030		0.03750		79.9	15	142			

Sample ID: **LCS-64796** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **64796** RunNo: **84889**
Prep Date: **12/30/2021** Analysis Date: **12/30/2021** SeqNo: **2986344** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.093	0.064	0.1875	0	49.8	31.7	75.4			
Surr: DNOP	0.014		0.01875		77.0	15	142			

Sample ID: **LCSD-64796** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **64796** RunNo: **84889**
Prep Date: **12/30/2021** Analysis Date: **12/30/2021** SeqNo: **2986345** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.094	0.064	0.1875	0	50.1	31.7	75.4	0.652	20	
Surr: DNOP	0.012		0.01875		65.9	15	142	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R84851** RunNo: **84851**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984836** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	108	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	102	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	94.0	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.1	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R84851** RunNo: **84851**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984865** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R84851** RunNo: **84851**
Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984865** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dichloropropane	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.4	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R84952** RunNo: **84952**
Prep Date: Analysis Date: **1/4/2022** SeqNo: **2988984** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	21	1.0	20.00	0	103	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	104	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	107	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.5	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	9.9		10.00		99.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R84952**	RunNo: **84952**
Prep Date:	Analysis Date: **1/4/2022**	SeqNo: **2989004** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
cis-1,2-DCE	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R84952**	RunNo: **84952**
Prep Date:	Analysis Date: **1/4/2022**	SeqNo: **2989004** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.4	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64785** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **64785** RunNo: **85034**
Prep Date: **12/29/2021** Analysis Date: **1/7/2022** SeqNo: **2991767** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Benzoic acid	ND	20								
Benzyl alcohol	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	10								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
Di-n-octyl phthalate	ND	20								
Dibenzofuran	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dimethylphenol	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
2-Nitrophenol	ND	5.0								
4-Nitrophenol	ND	5.0								
Phenol	ND	5.0								
Pyridine	ND	40								E
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	150		200.0		72.7	15	87			
Surr: Phenol-d5	110		200.0		57.1	15	67.5			
Surr: 2,4,6-Tribromophenol	150		200.0		75.7	15	122			
Surr: Nitrobenzene-d5	72		100.0		71.6	15	103			
Surr: 2-Fluorobiphenyl	67		100.0		66.7	15	103			
Surr: 4-Terphenyl-d14	110		100.0		114	45	137			

Sample ID: **LCS-64785** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **64785** RunNo: **85034**
Prep Date: **12/29/2021** Analysis Date: **1/7/2022** SeqNo: **2991769** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	67	5.0	100.0	0	67.1	15	87.6			
4-Nitrophenol	100	5.0	200.0	0	52.0	15	77			
Phenol	98	5.0	200.0	0	48.9	16.8	70.5			
Surr: 2-Fluorophenol	130		200.0		63.4	15	87			
Surr: Phenol-d5	96		200.0		48.0	15	67.5			
Surr: 2,4,6-Tribromophenol	170		200.0		86.4	15	122			
Surr: Nitrobenzene-d5	79		100.0		79.2	15	103			
Surr: 2-Fluorobiphenyl	77		100.0		77.4	15	103			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **LCS-64785** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **64785** RunNo: **85034**
Prep Date: **12/29/2021** Analysis Date: **1/7/2022** SeqNo: **2991769** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	120		100.0		122	45	137			

Sample ID: **LCSD-64785** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **64785** RunNo: **85034**
Prep Date: **12/29/2021** Analysis Date: **1/7/2022** SeqNo: **2991772** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	74	5.0	100.0	0	74.0	15	87.6	9.82	30.4	
4-Nitrophenol	110	5.0	200.0	0	55.5	15	77	6.53	52.4	
Phenol	110	5.0	200.0	0	52.9	16.8	70.5	7.92	37.2	
Surr: 2-Fluorophenol	130		200.0		65.2	15	87	0	0	
Surr: Phenol-d5	100		200.0		49.9	15	67.5	0	0	
Surr: 2,4,6-Tribromophenol	180		200.0		89.8	15	122	0	0	
Surr: Nitrobenzene-d5	82		100.0		82.2	15	103	0	0	
Surr: 2-Fluorobiphenyl	81		100.0		80.9	15	103	0	0	
Surr: 4-Terphenyl-d14	120		100.0		124	45	137	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb-64771** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64771** RunNo: **84909**
Prep Date: **12/29/2021** Analysis Date: **12/30/2021** SeqNo: **2987172** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Benzo(a)pyrene	ND	0.070								
Benzo(g,h,i)perylene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	2.4		4.000		59.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	4.8		8.000		59.8	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.7		4.000		43.0	15	84.5			
Surr: 4-Terphenyl-d14	3.6		4.000		91.0	73.1	152			

Sample ID: **lcs-64771** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64771** RunNo: **84909**
Prep Date: **12/29/2021** Analysis Date: **12/30/2021** SeqNo: **2987173** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.64	0.10	2.000	0	32.0	15	79.8			
Naphthalene	0.96	0.10	2.000	0	48.0	26.5	90.9			
1-Methylnaphthalene	1.0	0.10	2.000	0	50.0	27.9	88.2			
2-Methylnaphthalene	1.0	0.10	2.000	0	50.0	29.2	87.5			
Acenaphthene	1.0	0.10	2.000	0	51.0	25.6	93.9			
Fluorene	1.2	0.10	2.000	0	59.0	27.4	95.1			
Phenanthrene	1.2	0.10	2.000	0	59.0	25.1	104			
Anthracene	1.4	0.10	2.000	0	69.0	30.1	100			
Fluoranthene	1.9	0.20	2.000	0	93.0	41.6	126			
Pyrene	1.5	0.20	2.000	0	74.0	34.5	112			
Benz(a)anthracene	2.6	0.10	2.000	0	132	43.9	132			
Chrysene	1.5	0.10	2.000	0	77.0	39.8	118			
Benzo(b)fluoranthene	2.1	0.10	2.000	0	104	37.2	134			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **lcs-64771** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64771** RunNo: **84909**
Prep Date: **12/29/2021** Analysis Date: **12/30/2021** SeqNo: **2987173** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	2.3	0.070	2.000	0	115	36.6	122			
Benzo(g,h,i)perylene	1.9	0.10	2.000	0	95.0	39.4	120			
Indeno(1,2,3-cd)pyrene	2.8	0.30	2.000	0	142	24.9	150			
Surr: Nitrobenzene-d5	3.7		5.000		74.4	21.9	89.8			
Surr: 2,4,6-Tribromophenol	7.3		10.00		72.8	23.4	71.6			S
Surr: 2-Fluorobiphenyl	2.6		5.000		52.0	15	84.5			
Surr: 4-Terphenyl-d14	5.2		5.000		104	73.1	152			

Sample ID: **lcsd-64771** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **64771** RunNo: **84909**
Prep Date: **12/29/2021** Analysis Date: **12/30/2021** SeqNo: **2987174** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.84	0.10	4.000	0	21.0	15	79.8	27.0	34.2	
Naphthalene	1.3	0.10	4.000	0	32.5	26.5	90.9	30.1	37.6	
1-Methylnaphthalene	1.4	0.10	4.000	0	34.0	27.9	88.2	30.5	33.1	
2-Methylnaphthalene	1.4	0.10	4.000	0	34.0	29.2	87.5	30.5	35.4	
Acenaphthene	1.4	0.10	4.000	0	36.0	25.6	93.9	34.1	36.3	
Fluorene	1.6	0.10	4.000	0	39.5	27.4	95.1	29.0	32.2	
Phenanthrene	1.6	0.10	4.000	0	39.0	25.1	104	27.7	32.9	
Anthracene	1.8	0.10	4.000	0	44.0	30.1	100	24.2	31.5	
Fluoranthene	2.2	0.20	4.000	0	54.5	41.6	126	15.8	26.5	
Pyrene	1.8	0.20	4.000	0	46.0	34.5	112	21.7	23.3	
Benz(a)anthracene	2.8	0.10	4.000	0	70.5	43.9	132	6.59	29.5	
Chrysene	1.8	0.10	4.000	0	46.0	39.8	118	17.8	22.3	
Benzo(b)fluoranthene	2.4	0.10	4.000	0	60.0	37.2	134	14.3	25.2	
Benzo(a)pyrene	2.6	0.070	4.000	0	66.0	36.6	122	13.8	22.4	
Benzo(g,h,i)perylene	2.2	0.10	4.000	0	55.5	39.4	120	15.5	22.9	
Indeno(1,2,3-cd)pyrene	3.2	0.30	4.000	0	80.0	24.9	150	11.9	26.6	
Surr: Nitrobenzene-d5	4.9		10.00		49.2	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	9.2		20.00		45.8	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	3.4		10.00		34.4	15	84.5	0	0	
Surr: 4-Terphenyl-d14	6.3		10.00		63.4	73.1	152	0	0	S

Sample ID: **mb-64684** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64684** RunNo: **84909**
Prep Date: **12/22/2021** Analysis Date: **12/30/2021** SeqNo: **2987188** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	2.3		4.000		58.5	21.9	89.8			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **mb-64684** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64684** RunNo: **84909**
Prep Date: **12/22/2021** Analysis Date: **12/30/2021** SeqNo: **2987188** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	5.3		8.000		66.5	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.0		4.000		49.0	15	84.5			
Surr: 4-Terphenyl-d14	4.1		4.000		103	73.1	152			

Sample ID: **lcs-64684** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64684** RunNo: **84909**
Prep Date: **12/22/2021** Analysis Date: **12/30/2021** SeqNo: **2987189** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	4.2		5.000		84.8	21.9	89.8			
Surr: 2,4,6-Tribromophenol	7.6		10.00		75.6	23.4	71.6			S
Surr: 2-Fluorobiphenyl	3.5		5.000		69.6	15	84.5			
Surr: 4-Terphenyl-d14	5.6		5.000		112	73.1	152			

Sample ID: **lcsd-64684** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **64684** RunNo: **84909**
Prep Date: **12/22/2021** Analysis Date: **12/31/2021** SeqNo: **2987190** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.9		5.000		78.4	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	6.9		10.00		68.6	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	3.2		5.000		64.4	15	84.5	0	0	
Surr: 4-Terphenyl-d14	5.7		5.000		114	73.1	152	0	0	

Sample ID: **mb-64693** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64693** RunNo: **84979**
Prep Date: **12/22/2021** Analysis Date: **1/5/2022** SeqNo: **2989841** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	1.9		4.000		48.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	3.3		8.000		41.5	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.7		4.000		43.5	15	84.5			
Surr: 4-Terphenyl-d14	4.0		4.000		101	73.1	152			

Sample ID: **lcs-64693** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64693** RunNo: **84979**
Prep Date: **12/22/2021** Analysis Date: **1/5/2022** SeqNo: **2989842** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.4		5.000		68.4	21.9	89.8			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **lcs-64693** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64693** RunNo: **84979**
Prep Date: **12/22/2021** Analysis Date: **1/5/2022** SeqNo: **2989842** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	6.4		10.00		64.2	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.9		5.000		57.6	15	84.5			
Surr: 4-Terphenyl-d14	5.4		5.000		109	73.1	152			

Sample ID: **mb-64805** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64805** RunNo: **85004**
Prep Date: **12/30/2021** Analysis Date: **1/6/2022** SeqNo: **2990665** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Phenanthrene	ND	0.10								
Surr: Nitrobenzene-d5	2.5		4.000		61.5	21.9	89.8			
Surr: 2,4,6-Tribromophenol	4.5		8.000		56.5	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.3		4.000		58.0	15	84.5			
Surr: 4-Terphenyl-d14	4.7		4.000		118	73.1	152			

Sample ID: **lcs-64805** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64805** RunNo: **85004**
Prep Date: **12/30/2021** Analysis Date: **1/6/2022** SeqNo: **2990666** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.1	0.10	2.000	0	55.0	26.5	90.9			
1-Methylnaphthalene	1.1	0.10	2.000	0	57.0	27.9	88.2			
2-Methylnaphthalene	1.1	0.10	2.000	0	56.0	29.2	87.5			
Phenanthrene	1.4	0.10	2.000	0	69.0	25.1	104			
Surr: Nitrobenzene-d5	3.5		5.000		70.4	21.9	89.8			
Surr: 2,4,6-Tribromophenol	6.5		10.00		65.2	23.4	71.6			
Surr: 2-Fluorobiphenyl	3.0		5.000		60.8	15	84.5			
Surr: 4-Terphenyl-d14	5.9		5.000		118	73.1	152			

Sample ID: **lcsd-64805** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **64805** RunNo: **85004**
Prep Date: **12/30/2021** Analysis Date: **1/6/2022** SeqNo: **2990667** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	0.82	0.10	2.000	0	41.0	26.5	90.9	29.2	37.6	
1-Methylnaphthalene	0.80	0.10	2.000	0	40.0	27.9	88.2	35.1	33.1	R
2-Methylnaphthalene	0.76	0.10	2.000	0	38.0	29.2	87.5	38.3	35.4	R

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **lcsd-64805** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **64805** RunNo: **85004**
Prep Date: **12/30/2021** Analysis Date: **1/6/2022** SeqNo: **2990667** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenanthrene	1.4	0.10	2.000	0	72.0	25.1	104	4.26	32.9	
Surr: Nitrobenzene-d5	3.6		5.000		72.0	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	6.7		10.00		66.6	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	3.2		5.000		63.2	15	84.5	0	0	
Surr: 4-Terphenyl-d14	6.2		5.000		124	73.1	152	0	0	

Sample ID: **mb-64618** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **64618** RunNo: **85004**
Prep Date: **12/20/2021** Analysis Date: **1/7/2022** SeqNo: **2990676** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	2.8		4.000		69.0	21.9	89.8			
Surr: 2,4,6-Tribromophenol	5.0		8.000		62.3	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.3		4.000		56.5	15	84.5			
Surr: 4-Terphenyl-d14	4.7		4.000		118	73.1	152			

Sample ID: **lcs-64618** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **64618** RunNo: **85004**
Prep Date: **12/20/2021** Analysis Date: **1/7/2022** SeqNo: **2990677** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	3.8		5.000		75.6	21.9	89.8			
Surr: 2,4,6-Tribromophenol	7.0		10.00		69.8	23.4	71.6			
Surr: 2-Fluorobiphenyl	2.9		5.000		58.8	15	84.5			
Surr: 4-Terphenyl-d14	5.7		5.000		114	73.1	152			

Sample ID: **lcsd-64618** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **64618** RunNo: **85004**
Prep Date: **12/20/2021** Analysis Date: **1/7/2022** SeqNo: **2990678** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	4.2		5.000		83.2	21.9	89.8	0	0	
Surr: 2,4,6-Tribromophenol	8.2		10.00		81.6	23.4	71.6	0	0	S
Surr: 2-Fluorobiphenyl	3.2		5.000		64.8	15	84.5	0	0	
Surr: 4-Terphenyl-d14	6.9		5.000		139	73.1	152	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64772** SampType: **MBLK** TestCode: **SM5210B: BOD**
Client ID: **PBW** Batch ID: **64772** RunNo: **84910**
Prep Date: **12/29/2021** Analysis Date: **1/3/2022** SeqNo: **2987033** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID: **LCS-64772** SampType: **LCS** TestCode: **SM5210B: BOD**
Client ID: **LCSW** Batch ID: **64772** RunNo: **84910**
Prep Date: **12/29/2021** Analysis Date: **1/3/2022** SeqNo: **2987034** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	177	2.0	198.0	0	89.4	84.6	115.4			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**
26-Jan-22

Client: Marathon
Project: 2021 GW Sampling 4th Quarter

Sample ID: **MB-64765**	SampType: **MBLK**	TestCode: **SM 9223B Fecal Indicator: E. coli MPN**
Client ID: **PBW**	Batch ID: **64765**	RunNo: **84853**
Prep Date: **12/28/2021**	Analysis Date: **12/29/2021**	SeqNo: **2984899** Units: **MPN/100mL**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2112E16**

26-Jan-22

Client: Marathon

Project: 2021 GW Sampling 4th Quarter

Sample ID: **2.5ng gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSW** Batch ID: **G84851** RunNo: **84851**

Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984868** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBW** Batch ID: **G84851** RunNo: **84851**

Prep Date: Analysis Date: **12/29/2021** SeqNo: **2984889** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			

Sample ID: **2.5ng gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSW** Batch ID: **G84952** RunNo: **84952**

Prep Date: Analysis Date: **1/4/2022** SeqNo: **2989007** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	90.2	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBW** Batch ID: **G84952** RunNo: **84952**

Prep Date: Analysis Date: **1/4/2022** SeqNo: **2989025** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		111	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2112E16 | RcptNo: 1

Received By: Desiree Dominguez 12/28/2021 3:00:00 PM DD

Completed By: Desiree Dominguez 12/28/2021 3:06:52 PM DD

Reviewed By: JR 12.28.21

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	JR 12/28/21
8. Was preservative added to bottles?	Yes ☑	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 16 2 (<2 or >12 unless noted)

Adjusted? yes

Checked by: JR 12/28/21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

16. Additional remarks: 0.5ml of HNO3 was added to sample 004F for pH<2. Poured off 50ml from unpreserved 1L plastic from sample 004. Added 1.0ml of H2SO4 to sample 004H for COD analysis. JR 12/28/21.

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.8	Good				
2	3.2	Good				
3	2.0	Good				

Released to Imaging: 3/23/2022 10:22:25 AM
Received by OCD: 3/25/2022 3:35:30 PM

Chain-of-Custody Record

Client: Marathon Gallup Refinery

Mailing Address: 92 Giant Crossing Road
Jamestown NM,87301

Phone #: 808-640-1823

email or Fax#:

QA/QC Package:
X Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

X EDD (Type)

X Standard Rush

Project Name:
2021 GW Sampling 4th Quarter

Project #: **697-080-001**

Project Manager:
Lesli Alexander/Brian McLoughlin

Sampler:

On Ice: X Yes ☐ No CF -0.1

# of Coolers: (3) Corrected Temps ↓

Cooler Temp(including CF): 0.8°c, 3.2°c, 2.0°c

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2112E16	See Analyte List	VOC	TPH GRO	TPH DRO/MRO	SVOC	1,4 Dioxane	WQCC METALS	cations/anions	nitrate/nitrate	~~8011 EDB~~ BOD	COD	Cyanide	~~TDS/TSS~~ E-Coli	General Chemistry	~~PFAS~~ Pesticides
12-28-21	9:00		EB-12-28-21		12	-001	X	X	X	X		X	X	X							
12-28-21	9:05		MW-16		12	-002	X	X	X	X		X	X	X							
12-28-21	9:30		PW-4		13	-003	X	X			X		X		X			X			
12-28-21	10:00		EP-8		14	-004	X	X			X		X			X	X		X	X	+
12-28-21	10:00		FB-12-28-21		2	-005		X													
12-28-21	—		DUP-12-28-21		13	-006	X	X			X		X		X			X			
			Trip Blank DAD 12.28.21			-007															

Date	Time:	Relinquished by:	Received by:	Via:	Date	Time
12-28-21	1:30	Hilario Trejo		Courier	12/28/21	15:00
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

SAMPLES 001 - 007 did not receive 504.1 vials - DAD 12.28.21

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

April 08, 2021

Brian McLoughlin
Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX

RE: 2021 GW Sampling 1st Quarter OrderNo.: 2103354

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 9 sample(s) on 3/5/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Case Narrative

WO#: **2103354**
Date: **4/8/2021**

CLIENT: Marathon
Project: 2021 GW Sampling 1st Quarter

Analytical Notes Regarding EPA Method 8015D:
The samples listed below had a single contaminant peak that was identified in the QC and the samples listed below. The contaminant peak was manually removed from the summation of the diesel range organcis results. The concentration of the contaminant peak, in the samples that was removed, is listed next to the sample name: MKTF-31 (0.03mg/L), MKTF-40 (0.085mg/L), MKTF-28 (0.033mg/L), MKKTF-27 (0.02mg/L), MKTF-25 (0.1mg/L), Dup 3-5-21 (0.11mg/L), LCS 58585 (0.06mg/L), LCSD 58585 (0.01mg/L). We are researching the source of the contamination to prevent this peak from appearing in the future.

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	1.1	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Toluene	ND	1.0	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Ethylbenzene	ND	1.1	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Methyl tert-butyl ether (MTBE)	340	2.0	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,2,4-Trimethylbenzene	ND	0.61	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,3,5-Trimethylbenzene	ND	0.91	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,2-Dichloroethane (EDC)	16	1.1	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,2-Dibromoethane (EDB)	ND	1.5	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Naphthalene	ND	1.4	10	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1-Methylnaphthalene	ND	4.2	20	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
2-Methylnaphthalene	ND	3.5	20	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Acetone	ND	12	50	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Bromobenzene	ND	1.4	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Bromodichloromethane	ND	1.0	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Bromoform	ND	1.6	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Bromomethane	ND	7.8	15	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
2-Butanone	ND	5.6	50	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Carbon disulfide	ND	2.2	50	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Carbon Tetrachloride	ND	0.88	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Chlorobenzene	ND	0.68	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Chloroethane	ND	1.9	10	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Chloroform	ND	0.67	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Chloromethane	ND	2.0	15	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
2-Chlorotoluene	ND	0.66	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
4-Chlorotoluene	ND	2.6	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
cis-1,2-DCE	4.9	1.9	5.0	JD	µg/L	5	3/10/2021 11:48:45 PM	A75848
cis-1,3-Dichloropropene	ND	1.8	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,2-Dibromo-3-chloropropane	ND	2.9	10	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Dibromochloromethane	ND	1.4	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Dibromomethane	ND	1.5	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,2-Dichlorobenzene	ND	0.77	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,3-Dichlorobenzene	ND	0.81	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,4-Dichlorobenzene	ND	1.0	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Dichlorodifluoromethane	ND	2.2	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,1-Dichloroethane	36	1.4	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,1-Dichloroethene	54	0.65	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,2-Dichloropropane	ND	0.67	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,3-Dichloropropane	ND	0.90	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
2,2-Dichloropropane	ND	1.3	10	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,1-Dichloropropene	ND	0.90	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	1.6	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
2-Hexanone	ND	9.0	50	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Isopropylbenzene	ND	0.91	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
4-Isopropyltoluene	ND	1.0	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
4-Methyl-2-pentanone	ND	5.6	50	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Methylene Chloride	ND	2.0	15	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
n-Butylbenzene	ND	1.3	15	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
n-Propylbenzene	ND	0.91	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
sec-Butylbenzene	ND	3.0	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Styrene	ND	0.65	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
tert-Butylbenzene	ND	1.2	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,1,1,2-Tetrachloroethane	ND	1.3	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,1,2,2-Tetrachloroethane	ND	1.4	10	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Tetrachloroethene (PCE)	ND	1.8	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
trans-1,2-DCE	ND	2.4	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
trans-1,3-Dichloropropene	ND	1.7	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,2,3-Trichlorobenzene	ND	0.67	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,2,4-Trichlorobenzene	ND	1.2	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,1,1-Trichloroethane	2.9	1.5	5.0	JD	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,1,2-Trichloroethane	2.5	0.94	5.0	JD	µg/L	5	3/10/2021 11:48:45 PM	A75848
Trichloroethene (TCE)	5.4	1.0	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Trichlorofluoromethane	ND	0.46	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
1,2,3-Trichloropropane	ND	2.2	10	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Vinyl chloride	ND	0.98	5.0	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Xylenes, Total	ND	2.8	7.5	D	µg/L	5	3/10/2021 11:48:45 PM	A75848
Surr: 1,2-Dichloroethane-d4	114	0	70-130	D	%Rec	5	3/10/2021 11:48:45 PM	A75848
Surr: 4-Bromofluorobenzene	101	0	70-130	D	%Rec	5	3/10/2021 11:48:45 PM	A75848
Surr: Dibromofluoromethane	113	0	70-130	D	%Rec	5	3/10/2021 11:48:45 PM	A75848
Surr: Toluene-d8	121	0	70-130	D	%Rec	5	3/10/2021 11:48:45 PM	A75848
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.22	0.040	0.25	JD	mg/L	5	3/10/2021 11:48:45 PM	B75848
Surr: BFB	97.2	0	70-130	D	%Rec	5	3/10/2021 11:48:45 PM	B75848

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-001B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.11	0.075	0.085		mg/L	1	3/12/2021 9:49:16 AM	58585
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/12/2021 9:49:16 AM	58585
Surr: DNOP	78.4	0	45.1-141		%Rec	1	3/12/2021 9:49:16 AM	58585

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	0.0065	0.0062	0.0094	J	µg/L	1	3/16/2021 4:15:21 PM	58710

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Azobenzene	ND	0.55	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Benzoic acid	ND	1.1	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/9/2021 6:57:47 PM	58560
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Carbazole	ND	0.56	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/9/2021 6:57:47 PM	58560
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/9/2021 6:57:47 PM	58560
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Diethyl phthalate	ND	3.9	10		µg/L	1	3/9/2021 6:57:47 PM	58560
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/9/2021 6:57:47 PM	58560
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Isophorone	ND	0.40	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Phenol	ND	0.33	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Pyridine	ND	0.93	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/9/2021 6:57:47 PM	58560
Surr: 2-Fluorophenol	44.6	0	15-88.8		%Rec	1	3/9/2021 6:57:47 PM	58560
Surr: Phenol-d5	36.5	0	15-71.9		%Rec	1	3/9/2021 6:57:47 PM	58560
Surr: 2,4,6-Tribromophenol	83.9	0	15-97.4		%Rec	1	3/9/2021 6:57:47 PM	58560
Surr: Nitrobenzene-d5	59.8	0	15-117		%Rec	1	3/9/2021 6:57:47 PM	58560
Surr: 2-Fluorobiphenyl	64.1	0	15-100		%Rec	1	3/9/2021 6:57:47 PM	58560
Surr: 4-Terphenyl-d14	78.6	0	15-120		%Rec	1	3/9/2021 6:57:47 PM	58560
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2021 4:31:00 PM	58576
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2021 4:31:00 PM	58576
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/16/2021 4:31:00 PM	58576
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/16/2021 4:31:00 PM	58576
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2021 4:31:00 PM	58576
Surr: Nitrobenzene-d5	64.0	0	26.3-112		%Rec	1	3/16/2021 4:31:00 PM	58576
Surr: 2-Fluorobiphenyl	65.5	0	21.1-110		%Rec	1	3/16/2021 4:31:00 PM	58576

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	127	0	17.6-167		%Rec	1	3/16/2021 4:31:00 PM	58576

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.043	0.10		mg/L	1	3/5/2021 5:05:02 PM	R75758
Chloride	560	12	25	*	mg/L	50	3/8/2021 6:20:18 PM	R75784
Nitrogen, Nitrite (As N)	ND	0.28	2.0		mg/L	20	3/5/2021 5:17:23 PM	R75758
Bromide	0.66	0.050	0.10		mg/L	1	3/5/2021 5:05:02 PM	R75758
Nitrogen, Nitrate (As N)	ND	0.020	0.10		mg/L	1	3/5/2021 5:05:02 PM	R75758
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	3/5/2021 5:05:02 PM	R75758
Sulfate	81	5.0	10		mg/L	20	3/5/2021 5:17:23 PM	R75758

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-001F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	2.0	0.074	0.20	*	mg/L	10	3/10/2021 1:19:41 PM	58618
Barium	0.14	0.0016	0.0030		mg/L	1	3/10/2021 1:18:04 PM	58618
Beryllium	ND	0.00088	0.0020		mg/L	1	3/10/2021 1:18:04 PM	58618
Boron	0.55	0.0074	0.040		mg/L	1	3/10/2021 1:18:04 PM	58618
Cadmium	ND	0.0015	0.0020		mg/L	1	3/10/2021 1:18:04 PM	58618
Chromium	ND	0.0021	0.0060		mg/L	1	3/10/2021 1:18:04 PM	58618
Cobalt	ND	0.0024	0.0060		mg/L	1	3/10/2021 1:18:04 PM	58618
Copper	ND	0.0047	0.0060		mg/L	1	3/10/2021 1:18:04 PM	58618
Iron	0.65	0.013	0.050	*	mg/L	1	3/10/2021 1:18:04 PM	58618
Manganese	0.043	0.00081	0.0020		mg/L	1	3/10/2021 1:18:04 PM	58618
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/10/2021 1:18:04 PM	58618
Nickel	0.0050	0.0033	0.010	J	mg/L	1	3/10/2021 1:18:04 PM	58618
Silver	0.0017	0.0013	0.0050	J	mg/L	1	3/10/2021 1:18:04 PM	58618
Zinc	ND	0.0064	0.010		mg/L	1	3/10/2021 1:18:04 PM	58618
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/10/2021 12:22:03 PM	58618
Arsenic	0.00063	0.00026	0.0010	J	mg/L	1	3/10/2021 12:22:03 PM	58618
Lead	0.00054	0.000034	0.00050		mg/L	1	3/10/2021 12:22:03 PM	58618
Selenium	0.00067	0.00066	0.0010	J	mg/L	1	3/10/2021 12:22:03 PM	58618
Thallium	ND	0.00025	0.00025		mg/L	1	3/10/2021 12:22:03 PM	58618
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 4:40:38 PM	58666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-001G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/8/2021 1:08:33 PM	B75766
Barium	0.12	0.0011	0.0020		mg/L	1	3/8/2021 1:08:33 PM	B75766
Beryllium	ND	0.00088	0.0020		mg/L	1	3/8/2021 1:08:33 PM	B75766
Boron	0.50	0.0067	0.040		mg/L	1	3/8/2021 1:08:33 PM	B75766
Cadmium	ND	0.0012	0.0020		mg/L	1	3/8/2021 1:08:33 PM	B75766
Calcium	110	1.1	10		mg/L	10	3/8/2021 1:10:08 PM	B75766
Chromium	ND	0.0020	0.0060		mg/L	1	3/8/2021 1:08:33 PM	B75766
Cobalt	ND	0.0024	0.0060		mg/L	1	3/8/2021 1:08:33 PM	B75766
Copper	ND	0.0035	0.0060		mg/L	1	3/8/2021 1:08:33 PM	B75766
Iron	ND	0.010	0.020		mg/L	1	3/8/2021 1:08:33 PM	B75766
Magnesium	23	0.067	1.0		mg/L	1	3/8/2021 1:08:33 PM	B75766
Manganese	0.018	0.00058	0.0020		mg/L	1	3/8/2021 1:08:33 PM	B75766
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/8/2021 1:08:33 PM	B75766
Nickel	ND	0.0033	0.010		mg/L	1	3/8/2021 1:08:33 PM	B75766
Potassium	1.0	0.16	1.0		mg/L	1	3/8/2021 1:08:33 PM	B75766
Silver	0.0014	0.0013	0.0050	J	mg/L	1	3/9/2021 1:06:10 PM	A75785
Sodium	470	1.4	10		mg/L	10	3/8/2021 1:10:08 PM	B75766
Zinc	0.011	0.0060	0.010		mg/L	1	3/8/2021 1:08:33 PM	B75766
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/10/2021 4:06:08 PM	A75856
Arsenic	0.00054	0.00021	0.0010	J	mg/L	1	3/10/2021 4:06:08 PM	A75856
Lead	0.000045	0.000034	0.00050	J	mg/L	1	3/10/2021 4:06:08 PM	A75856
Selenium	0.0010	0.00066	0.0010	J	mg/L	1	3/10/2021 4:06:08 PM	A75856
Thallium	ND	0.000035	0.00050		mg/L	1	3/10/2021 4:06:08 PM	A75856
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 4:43:03 PM	58666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:15:00 AM
Lab ID: 2103354-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Toluene	ND	0.20	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Methyl tert-butyl ether (MTBE)	1.2	0.39	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Naphthalene	ND	0.28	2.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Acetone	ND	2.3	10		µg/L	1	3/11/2021 12:15:56 AM	A75848
Bromobenzene	ND	0.28	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Bromoform	ND	0.31	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Bromomethane	ND	1.6	3.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
2-Butanone	ND	1.1	10		µg/L	1	3/11/2021 12:15:56 AM	A75848
Carbon disulfide	ND	0.44	10		µg/L	1	3/11/2021 12:15:56 AM	A75848
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Chloroethane	ND	0.38	2.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Chloromethane	ND	0.40	3.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Dibromomethane	ND	0.31	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,1-Dichloroethane	0.88	0.27	1.0	J	µg/L	1	3/11/2021 12:15:56 AM	A75848
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:15:00 AM
Lab ID: 2103354-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
2-Hexanone	ND	1.8	10		µg/L	1	3/11/2021 12:15:56 AM	A75848
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/11/2021 12:15:56 AM	A75848
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Styrene	ND	0.13	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/11/2021 12:15:56 AM	A75848
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/11/2021 12:15:56 AM	A75848
Surr: 1,2-Dichloroethane-d4	116	0	70-130		%Rec	1	3/11/2021 12:15:56 AM	A75848
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	3/11/2021 12:15:56 AM	A75848
Surr: Dibromofluoromethane	115	0	70-130		%Rec	1	3/11/2021 12:15:56 AM	A75848
Surr: Toluene-d8	118	0	70-130		%Rec	1	3/11/2021 12:15:56 AM	A75848
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.024	0.0080	0.050	J	mg/L	1	3/11/2021 12:15:56 AM	B75848
Surr: BFB	101	0	70-130		%Rec	1	3/11/2021 12:15:56 AM	B75848

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:15:00 AM
Lab ID: 2103354-002B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	ND	0.075	0.085		mg/L	1	3/12/2021 10:13:00 AM	58585
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/12/2021 10:13:00 AM	58585
Surr: DNOP	73.6	0	45.1-141		%Rec	1	3/12/2021 10:13:00 AM	58585

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:15:00 AM
Lab ID: 2103354-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0062	0.0094		µg/L	1	3/16/2021 4:30:22 PM	58710

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:15:00 AM
Lab ID: 2103354-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Azobenzene	ND	0.55	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Benzoic acid	ND	1.1	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Bis(2-ethylhexyl)phthalate	4.6	4.5	10	J	µg/L	1	3/9/2021 7:38:55 PM	58560
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Carbazole	ND	0.56	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/9/2021 7:38:55 PM	58560
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/9/2021 7:38:55 PM	58560
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Diethyl phthalate	ND	3.9	10		µg/L	1	3/9/2021 7:38:55 PM	58560
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/9/2021 7:38:55 PM	58560
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Isophorone	ND	0.40	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
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ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:15:00 AM
Lab ID: 2103354-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Phenol	ND	0.33	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Pyridine	ND	0.93	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/9/2021 7:38:55 PM	58560
Surr: 2-Fluorophenol	28.6	0	15-88.8		%Rec	1	3/9/2021 7:38:55 PM	58560
Surr: Phenol-d5	23.7	0	15-71.9		%Rec	1	3/9/2021 7:38:55 PM	58560
Surr: 2,4,6-Tribromophenol	41.5	0	15-97.4		%Rec	1	3/9/2021 7:38:55 PM	58560
Surr: Nitrobenzene-d5	39.9	0	15-117		%Rec	1	3/9/2021 7:38:55 PM	58560
Surr: 2-Fluorobiphenyl	34.4	0	15-100		%Rec	1	3/9/2021 7:38:55 PM	58560
Surr: 4-Terphenyl-d14	65.7	0	15-120		%Rec	1	3/9/2021 7:38:55 PM	58560
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2021 5:15:00 PM	58576
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2021 5:15:00 PM	58576
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/16/2021 5:15:00 PM	58576
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/16/2021 5:15:00 PM	58576
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2021 5:15:00 PM	58576
Surr: Nitrobenzene-d5	49.0	0	26.3-112		%Rec	1	3/16/2021 5:15:00 PM	58576
Surr: 2-Fluorobiphenyl	47.5	0	21.1-110		%Rec	1	3/16/2021 5:15:00 PM	58576

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:15:00 AM
Lab ID: 2103354-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	93.5	0	17.6-167		%Rec	1	3/16/2021 5:15:00 PM	58576

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:15:00 AM
Lab ID: 2103354-002E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.22	0.50		mg/L	5	3/5/2021 5:29:43 PM	R75758
Chloride	3200	120	250	*	mg/L	500	3/8/2021 6:33:10 PM	R75784
Nitrogen, Nitrite (As N)	ND	0.28	2.0		mg/L	20	3/5/2021 5:42:05 PM	R75758
Bromide	1.4	0.25	0.50		mg/L	5	3/5/2021 5:29:43 PM	R75758
Nitrogen, Nitrate (As N)	0.14	0.10	0.50	J	mg/L	5	3/5/2021 5:29:43 PM	R75758
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/5/2021 5:29:43 PM	R75758
Sulfate	520	5.0	10	*	mg/L	20	3/5/2021 5:42:05 PM	R75758

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:15:00 AM
Lab ID: 2103354-002F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	1.8	0.037	0.10	*	mg/L	5	3/10/2021 1:30:44 PM	58618
Barium	0.080	0.0082	0.015		mg/L	5	3/10/2021 1:30:44 PM	58618
Beryllium	ND	0.0044	0.010		mg/L	5	3/10/2021 1:30:44 PM	58618
Boron	2.2	0.037	0.20		mg/L	5	3/10/2021 1:30:44 PM	58618
Cadmium	ND	0.0074	0.010		mg/L	5	3/10/2021 1:30:44 PM	58618
Chromium	ND	0.011	0.030		mg/L	5	3/10/2021 1:30:44 PM	58618
Cobalt	ND	0.012	0.030		mg/L	5	3/10/2021 1:30:44 PM	58618
Copper	ND	0.024	0.030		mg/L	5	3/10/2021 1:30:44 PM	58618
Iron	0.88	0.064	0.25	*	mg/L	5	3/10/2021 1:30:44 PM	58618
Manganese	0.031	0.0041	0.010		mg/L	5	3/10/2021 1:30:44 PM	58618
Molybdenum	ND	0.033	0.040		mg/L	5	3/10/2021 1:30:44 PM	58618
Nickel	ND	0.016	0.050		mg/L	5	3/10/2021 1:30:44 PM	58618
Silver	ND	0.0063	0.025		mg/L	5	3/10/2021 1:30:44 PM	58618
Zinc	ND	0.032	0.050		mg/L	5	3/10/2021 1:30:44 PM	58618
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/10/2021 1:02:20 PM	58618
Arsenic	ND	0.0013	0.0050		mg/L	5	3/10/2021 1:02:20 PM	58618
Lead	0.00096	0.00017	0.0025	J	mg/L	5	3/10/2021 1:02:20 PM	58618
Selenium	ND	0.0033	0.0050		mg/L	5	3/10/2021 1:02:20 PM	58618
Thallium	ND	0.0012	0.0012		mg/L	5	3/10/2021 1:02:20 PM	58618
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 4:45:28 PM	58666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:15:00 AM
Lab ID: 2103354-002G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.018	0.0056	0.020	J	mg/L	1	3/8/2021 1:11:42 PM	B75766
Barium	0.057	0.0011	0.0020		mg/L	1	3/8/2021 1:11:42 PM	B75766
Beryllium	ND	0.00088	0.0020		mg/L	1	3/8/2021 1:11:42 PM	B75766
Boron	2.0	0.033	0.20		mg/L	5	3/8/2021 1:13:17 PM	B75766
Cadmium	ND	0.0012	0.0020		mg/L	1	3/8/2021 1:11:42 PM	B75766
Calcium	250	0.57	5.0		mg/L	5	3/8/2021 1:13:17 PM	B75766
Chromium	ND	0.0020	0.0060		mg/L	1	3/8/2021 1:11:42 PM	B75766
Cobalt	0.0028	0.0024	0.0060	J	mg/L	1	3/8/2021 1:11:42 PM	B75766
Copper	ND	0.0035	0.0060		mg/L	1	3/8/2021 1:11:42 PM	B75766
Iron	0.017	0.010	0.020	J	mg/L	1	3/8/2021 1:11:42 PM	B75766
Magnesium	51	0.067	1.0		mg/L	1	3/8/2021 1:11:42 PM	B75766
Manganese	0.0011	0.00058	0.0020	J	mg/L	1	3/8/2021 1:11:42 PM	B75766
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/8/2021 1:11:42 PM	B75766
Nickel	0.0051	0.0033	0.010	J	mg/L	1	3/8/2021 1:11:42 PM	B75766
Potassium	5.8	0.16	1.0		mg/L	1	3/8/2021 1:11:42 PM	B75766
Silver	0.0022	0.0013	0.0050	J	mg/L	1	3/9/2021 1:07:43 PM	A75785
Sodium	2200	6.9	50		mg/L	50	3/8/2021 1:36:32 PM	B75766
Zinc	0.016	0.0060	0.010		mg/L	1	3/8/2021 1:11:42 PM	B75766
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/10/2021 4:22:27 PM	A75856
Arsenic	ND	0.0010	0.0050		mg/L	5	3/10/2021 4:22:27 PM	A75856
Lead	ND	0.00017	0.0025		mg/L	5	3/10/2021 4:22:27 PM	A75856
Selenium	ND	0.0033	0.0050		mg/L	5	3/10/2021 4:22:27 PM	A75856
Thallium	ND	0.00017	0.0025		mg/L	5	3/10/2021 4:22:27 PM	A75856
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 4:47:53 PM	58666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:40:00 AM
Lab ID: 2103354-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Toluene	ND	0.20	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Methyl tert-butyl ether (MTBE)	0.60	0.39	1.0	J	µg/L	1	3/11/2021 12:43:06 AM	A75848
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Naphthalene	ND	0.28	2.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Acetone	ND	2.3	10		µg/L	1	3/11/2021 12:43:06 AM	A75848
Bromobenzene	ND	0.28	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Bromoform	ND	0.31	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Bromomethane	ND	1.6	3.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
2-Butanone	ND	1.1	10		µg/L	1	3/11/2021 12:43:06 AM	A75848
Carbon disulfide	ND	0.44	10		µg/L	1	3/11/2021 12:43:06 AM	A75848
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Chloroethane	ND	0.38	2.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Chloromethane	ND	0.40	3.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Dibromomethane	ND	0.31	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:40:00 AM
Lab ID: 2103354-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
2-Hexanone	ND	1.8	10		µg/L	1	3/11/2021 12:43:06 AM	A75848
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/11/2021 12:43:06 AM	A75848
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Styrene	ND	0.13	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/11/2021 12:43:06 AM	A75848
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/11/2021 12:43:06 AM	A75848
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	3/11/2021 12:43:06 AM	A75848
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	3/11/2021 12:43:06 AM	A75848
Surr: Dibromofluoromethane	111	0	70-130		%Rec	1	3/11/2021 12:43:06 AM	A75848
Surr: Toluene-d8	117	0	70-130		%Rec	1	3/11/2021 12:43:06 AM	A75848
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.023	0.0080	0.050	J	mg/L	1	3/11/2021 12:43:06 AM	B75848
Surr: BFB	96.6	0	70-130		%Rec	1	3/11/2021 12:43:06 AM	B75848

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:40:00 AM
Lab ID: 2103354-003B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.087	0.075	0.085		mg/L	1	3/12/2021 10:36:42 AM	58585
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/12/2021 10:36:42 AM	58585
Surr: DNOP	74.4	0	45.1-141		%Rec	1	3/12/2021 10:36:42 AM	58585

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:40:00 AM
Lab ID: 2103354-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Azobenzene	ND	0.55	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Benzoic acid	ND	1.1	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/9/2021 8:20:19 PM	58560
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Carbazole	ND	0.56	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/9/2021 8:20:19 PM	58560
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/9/2021 8:20:19 PM	58560
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Diethyl phthalate	ND	3.9	10		µg/L	1	3/9/2021 8:20:19 PM	58560
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/9/2021 8:20:19 PM	58560
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Isophorone	ND	0.40	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:40:00 AM
Lab ID: 2103354-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Phenol	ND	0.33	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Pyridine	ND	0.93	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/9/2021 8:20:19 PM	58560
Surr: 2-Fluorophenol	38.6	0	15-88.8		%Rec	1	3/9/2021 8:20:19 PM	58560
Surr: Phenol-d5	32.4	0	15-71.9		%Rec	1	3/9/2021 8:20:19 PM	58560
Surr: 2,4,6-Tribromophenol	63.8	0	15-97.4		%Rec	1	3/9/2021 8:20:19 PM	58560
Surr: Nitrobenzene-d5	54.5	0	15-117		%Rec	1	3/9/2021 8:20:19 PM	58560
Surr: 2-Fluorobiphenyl	55.1	0	15-100		%Rec	1	3/9/2021 8:20:19 PM	58560
Surr: 4-Terphenyl-d14	62.2	0	15-120		%Rec	1	3/9/2021 8:20:19 PM	58560
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2021 5:59:00 PM	58576
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2021 5:59:00 PM	58576
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/16/2021 5:59:00 PM	58576
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/16/2021 5:59:00 PM	58576
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2021 5:59:00 PM	58576
Surr: Nitrobenzene-d5	53.5	0	26.3-112		%Rec	1	3/16/2021 5:59:00 PM	58576
Surr: 2-Fluorobiphenyl	57.0	0	21.1-110		%Rec	1	3/16/2021 5:59:00 PM	58576

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:40:00 AM
Lab ID: 2103354-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	93.5	0	17.6-167		%Rec	1	3/16/2021 5:59:00 PM	58576

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:40:00 AM
Lab ID: 2103354-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	1.0	0.22	0.50		mg/L	5	3/5/2021 5:54:26 PM	R75758
Chloride	680	12	25	*	mg/L	50	3/8/2021 7:11:49 PM	R75784
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/5/2021 5:54:26 PM	R75758
Bromide	2.4	0.25	0.50		mg/L	5	3/5/2021 5:54:26 PM	R75758
Nitrogen, Nitrate (As N)	0.12	0.10	0.50	J	mg/L	5	3/5/2021 5:54:26 PM	R75758
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/5/2021 5:54:26 PM	R75758
Sulfate	150	1.2	2.5		mg/L	5	3/5/2021 5:54:26 PM	R75758

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:40:00 AM
Lab ID: 2103354-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.69	0.0074	0.020	*	mg/L	1	3/10/2021 1:35:29 PM	58618
Barium	0.064	0.0016	0.0030		mg/L	1	3/10/2021 1:35:29 PM	58618
Beryllium	ND	0.00088	0.0020		mg/L	1	3/10/2021 1:35:29 PM	58618
Boron	1.4	0.037	0.20		mg/L	5	3/10/2021 1:37:04 PM	58618
Cadmium	ND	0.0015	0.0020		mg/L	1	3/10/2021 1:35:29 PM	58618
Chromium	ND	0.0021	0.0060		mg/L	1	3/10/2021 1:35:29 PM	58618
Cobalt	ND	0.0024	0.0060		mg/L	1	3/10/2021 1:35:29 PM	58618
Copper	ND	0.0047	0.0060		mg/L	1	3/10/2021 1:35:29 PM	58618
Iron	0.38	0.013	0.050	*	mg/L	1	3/10/2021 1:35:29 PM	58618
Manganese	0.014	0.00081	0.0020		mg/L	1	3/10/2021 1:35:29 PM	58618
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/10/2021 1:35:29 PM	58618
Nickel	0.0038	0.0033	0.010	J	mg/L	1	3/10/2021 1:35:29 PM	58618
Silver	ND	0.0013	0.0050		mg/L	1	3/10/2021 1:35:29 PM	58618
Zinc	ND	0.0064	0.010		mg/L	1	3/10/2021 1:35:29 PM	58618
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/10/2021 12:34:00 PM	58618
Arsenic	0.0012	0.00026	0.0010		mg/L	1	3/10/2021 12:34:00 PM	58618
Lead	0.00037	0.000034	0.00050	J	mg/L	1	3/10/2021 12:34:00 PM	58618
Selenium	0.00091	0.00066	0.0010	J	mg/L	1	3/10/2021 12:34:00 PM	58618
Thallium	ND	0.00025	0.00025		mg/L	1	3/10/2021 12:34:00 PM	58618
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 4:50:19 PM	58666

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:40:00 AM
Lab ID: 2103354-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.16	0.0056	0.020		mg/L	1	3/8/2021 1:22:22 PM	B75766
Barium	0.062	0.0011	0.0020		mg/L	1	3/8/2021 1:22:22 PM	B75766
Beryllium	ND	0.00088	0.0020		mg/L	1	3/8/2021 1:22:22 PM	B75766
Boron	1.4	0.067	0.40		mg/L	10	3/8/2021 1:23:58 PM	B75766
Cadmium	ND	0.0012	0.0020		mg/L	1	3/8/2021 1:22:22 PM	B75766
Calcium	58	0.11	1.0		mg/L	1	3/8/2021 1:22:22 PM	B75766
Chromium	ND	0.0020	0.0060		mg/L	1	3/8/2021 1:22:22 PM	B75766
Cobalt	ND	0.0024	0.0060		mg/L	1	3/8/2021 1:22:22 PM	B75766
Copper	ND	0.0035	0.0060		mg/L	1	3/8/2021 1:22:22 PM	B75766
Iron	0.067	0.010	0.020		mg/L	1	3/8/2021 1:22:22 PM	B75766
Magnesium	12	0.067	1.0		mg/L	1	3/8/2021 1:22:22 PM	B75766
Manganese	0.0088	0.00058	0.0020		mg/L	1	3/8/2021 1:22:22 PM	B75766
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/8/2021 1:22:22 PM	B75766
Nickel	ND	0.0033	0.010		mg/L	1	3/8/2021 1:22:22 PM	B75766
Potassium	1.9	0.16	1.0		mg/L	1	3/8/2021 1:22:22 PM	B75766
Silver	ND	0.0013	0.0050		mg/L	1	3/9/2021 1:09:16 PM	A75785
Sodium	640	1.4	10		mg/L	10	3/8/2021 1:23:58 PM	B75766
Zinc	ND	0.0060	0.010		mg/L	1	3/8/2021 1:22:22 PM	B75766
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/10/2021 4:14:17 PM	A75856
Arsenic	ND	0.0010	0.0050		mg/L	5	3/10/2021 4:25:09 PM	A75856
Lead	0.00015	0.000034	0.00050	J	mg/L	1	3/10/2021 4:14:17 PM	A75856
Selenium	ND	0.0033	0.0050		mg/L	5	3/10/2021 4:25:09 PM	A75856
Thallium	ND	0.000035	0.00050		mg/L	1	3/10/2021 4:14:17 PM	A75856
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 4:52:45 PM	58666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:00:00 AM
Lab ID: 2103354-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Toluene	ND	0.20	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Methyl tert-butyl ether (MTBE)	4.1	0.39	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Naphthalene	ND	0.28	2.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Acetone	ND	2.3	10		µg/L	1	3/11/2021 1:10:14 AM	A75848
Bromobenzene	ND	0.28	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Bromoform	ND	0.31	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Bromomethane	ND	1.6	3.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
2-Butanone	ND	1.1	10		µg/L	1	3/11/2021 1:10:14 AM	A75848
Carbon disulfide	ND	0.44	10		µg/L	1	3/11/2021 1:10:14 AM	A75848
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Chloroethane	ND	0.38	2.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Chloromethane	ND	0.40	3.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Dibromomethane	ND	0.31	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,1-Dichloroethane	0.52	0.27	1.0	J	µg/L	1	3/11/2021 1:10:14 AM	A75848
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:00:00 AM
Lab ID: 2103354-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
2-Hexanone	ND	1.8	10		µg/L	1	3/11/2021 1:10:14 AM	A75848
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/11/2021 1:10:14 AM	A75848
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Styrene	ND	0.13	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/11/2021 1:10:14 AM	A75848
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/11/2021 1:10:14 AM	A75848
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	3/11/2021 1:10:14 AM	A75848
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	3/11/2021 1:10:14 AM	A75848
Surr: Dibromofluoromethane	117	0	70-130		%Rec	1	3/11/2021 1:10:14 AM	A75848
Surr: Toluene-d8	119	0	70-130		%Rec	1	3/11/2021 1:10:14 AM	A75848
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.025	0.0080	0.050	J	mg/L	1	3/11/2021 1:10:14 AM	B75848
Surr: BFB	99.1	0	70-130		%Rec	1	3/11/2021 1:10:14 AM	B75848

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:00:00 AM
Lab ID: 2103354-004B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.11	0.075	0.085		mg/L	1	3/12/2021 11:00:31 AM	58585
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/12/2021 11:00:31 AM	58585
Surr: DNOP	74.4	0	45.1-141		%Rec	1	3/12/2021 11:00:31 AM	58585

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:00:00 AM
Lab ID: 2103354-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0062	0.0094		µg/L	1	3/16/2021 4:45:27 PM	58710

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:00:00 AM
Lab ID: 2103354-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Azobenzene	ND	0.55	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Benzoic acid	ND	1.1	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/9/2021 9:01:19 PM	58560
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Carbazole	ND	0.56	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/9/2021 9:01:19 PM	58560
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/9/2021 9:01:19 PM	58560
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Diethyl phthalate	ND	3.9	10		µg/L	1	3/9/2021 9:01:19 PM	58560
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/9/2021 9:01:19 PM	58560
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Isophorone	ND	0.40	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
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J	Analyte detected below quantitation limits
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P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:00:00 AM
Lab ID: 2103354-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Phenol	ND	0.33	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Pyridine	ND	0.93	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/9/2021 9:01:19 PM	58560
Surr: 2-Fluorophenol	49.7	0	15-88.8		%Rec	1	3/9/2021 9:01:19 PM	58560
Surr: Phenol-d5	45.1	0	15-71.9		%Rec	1	3/9/2021 9:01:19 PM	58560
Surr: 2,4,6-Tribromophenol	65.2	0	15-97.4		%Rec	1	3/9/2021 9:01:19 PM	58560
Surr: Nitrobenzene-d5	70.3	0	15-117		%Rec	1	3/9/2021 9:01:19 PM	58560
Surr: 2-Fluorobiphenyl	76.8	0	15-100		%Rec	1	3/9/2021 9:01:19 PM	58560
Surr: 4-Terphenyl-d14	79.7	0	15-120		%Rec	1	3/9/2021 9:01:19 PM	58560
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2021 6:42:00 PM	58576
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2021 6:42:00 PM	58576
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/16/2021 6:42:00 PM	58576
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/16/2021 6:42:00 PM	58576
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2021 6:42:00 PM	58576
Surr: Nitrobenzene-d5	57.5	0	26.3-112		%Rec	1	3/16/2021 6:42:00 PM	58576
Surr: 2-Fluorobiphenyl	61.0	0	21.1-110		%Rec	1	3/16/2021 6:42:00 PM	58576

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:00:00 AM
Lab ID: 2103354-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	108	0	17.6-167		%Rec	1	3/16/2021 6:42:00 PM	58576

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:00:00 AM
Lab ID: 2103354-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	1.2	0.22	0.50		mg/L	5	3/5/2021 6:43:49 PM	R75758
Chloride	3100	120	250	*	mg/L	500	3/8/2021 7:24:42 PM	R75784
Nitrogen, Nitrite (As N)	ND	0.28	2.0		mg/L	20	3/5/2021 6:56:10 PM	R75758
Bromide	1.9	0.25	0.50		mg/L	5	3/5/2021 6:43:49 PM	R75758
Nitrogen, Nitrate (As N)	1.6	0.10	0.50		mg/L	5	3/5/2021 6:43:49 PM	R75758
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/5/2021 6:43:49 PM	R75758
Sulfate	430	5.0	10	*	mg/L	20	3/5/2021 6:56:10 PM	R75758

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:00:00 AM
Lab ID: 2103354-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	1.3	0.037	0.10	*	mg/L	5	3/10/2021 1:40:10 PM	58618
Barium	0.076	0.0082	0.015		mg/L	5	3/10/2021 1:40:10 PM	58618
Beryllium	ND	0.0044	0.010		mg/L	5	3/10/2021 1:40:10 PM	58618
Boron	0.40	0.037	0.20		mg/L	5	3/10/2021 1:40:10 PM	58618
Cadmium	ND	0.0074	0.010		mg/L	5	3/10/2021 1:40:10 PM	58618
Chromium	ND	0.011	0.030		mg/L	5	3/10/2021 1:40:10 PM	58618
Cobalt	ND	0.012	0.030		mg/L	5	3/10/2021 1:40:10 PM	58618
Copper	ND	0.024	0.030		mg/L	5	3/10/2021 1:40:10 PM	58618
Iron	0.70	0.064	0.25	*	mg/L	5	3/10/2021 1:40:10 PM	58618
Manganese	0.081	0.0041	0.010	*	mg/L	5	3/10/2021 1:40:10 PM	58618
Molybdenum	ND	0.033	0.040		mg/L	5	3/10/2021 1:40:10 PM	58618
Nickel	0.027	0.016	0.050	J	mg/L	5	3/10/2021 1:40:10 PM	58618
Silver	ND	0.0063	0.025		mg/L	5	3/10/2021 1:40:10 PM	58618
Zinc	ND	0.032	0.050		mg/L	5	3/10/2021 1:40:10 PM	58618
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/10/2021 1:04:44 PM	58618
Arsenic	ND	0.0013	0.0050		mg/L	5	3/10/2021 1:04:44 PM	58618
Lead	0.00044	0.00017	0.0025	J	mg/L	5	3/10/2021 1:04:44 PM	58618
Selenium	0.0037	0.0033	0.0050	J	mg/L	5	3/10/2021 1:04:44 PM	58618
Thallium	ND	0.0012	0.0012		mg/L	5	3/10/2021 1:04:44 PM	58618
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 4:55:10 PM	58666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:00:00 AM
Lab ID: 2103354-004G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/8/2021 1:25:31 PM	B75766
Barium	0.065	0.0011	0.0020		mg/L	1	3/8/2021 1:25:31 PM	B75766
Beryllium	ND	0.00088	0.0020		mg/L	1	3/8/2021 1:25:31 PM	B75766
Boron	0.37	0.0067	0.040		mg/L	1	3/8/2021 1:25:31 PM	B75766
Cadmium	ND	0.0012	0.0020		mg/L	1	3/8/2021 1:25:31 PM	B75766
Calcium	300	1.1	10		mg/L	10	3/8/2021 1:27:06 PM	B75766
Chromium	ND	0.0020	0.0060		mg/L	1	3/8/2021 1:25:31 PM	B75766
Cobalt	0.0041	0.0024	0.0060	J	mg/L	1	3/8/2021 1:25:31 PM	B75766
Copper	0.0071	0.0035	0.0060		mg/L	1	3/8/2021 1:25:31 PM	B75766
Iron	0.011	0.010	0.020	J	mg/L	1	3/8/2021 1:25:31 PM	B75766
Magnesium	54	0.067	1.0		mg/L	1	3/8/2021 1:25:31 PM	B75766
Manganese	0.0029	0.00058	0.0020		mg/L	1	3/8/2021 1:25:31 PM	B75766
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/8/2021 1:25:31 PM	B75766
Nickel	0.024	0.0033	0.010		mg/L	1	3/8/2021 1:25:31 PM	B75766
Potassium	10	0.16	1.0		mg/L	1	3/8/2021 1:25:31 PM	B75766
Silver	0.0024	0.0013	0.0050	J	mg/L	1	3/9/2021 1:10:47 PM	A75785
Sodium	2300	6.9	50		mg/L	50	3/8/2021 1:28:41 PM	B75766
Zinc	ND	0.0060	0.010		mg/L	1	3/8/2021 1:25:31 PM	B75766
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/10/2021 4:27:53 PM	A75856
Arsenic	ND	0.0010	0.0050		mg/L	5	3/10/2021 4:27:53 PM	A75856
Lead	ND	0.00017	0.0025		mg/L	5	3/10/2021 4:27:53 PM	A75856
Selenium	ND	0.0033	0.0050		mg/L	5	3/10/2021 4:27:53 PM	A75856
Thallium	ND	0.00017	0.0025		mg/L	5	3/10/2021 4:27:53 PM	A75856
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 5:02:20 PM	58666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:20:00 AM
Lab ID: 2103354-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	760	2.3	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
Toluene	2.7	2.0	10	J	µg/L	10	3/11/2021 1:37:19 AM	A75848
Ethylbenzene	ND	2.1	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
Methyl tert-butyl ether (MTBE)	980	3.9	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,2,4-Trimethylbenzene	ND	1.2	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,2-Dichloroethane (EDC)	11	2.2	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
Naphthalene	ND	2.8	20		µg/L	10	3/11/2021 1:37:19 AM	A75848
1-Methylnaphthalene	ND	8.4	40		µg/L	10	3/11/2021 1:37:19 AM	A75848
2-Methylnaphthalene	ND	6.9	40		µg/L	10	3/11/2021 1:37:19 AM	A75848
Acetone	ND	23	100		µg/L	10	3/11/2021 1:37:19 AM	A75848
Bromobenzene	ND	2.8	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
Bromodichloromethane	ND	2.0	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
Bromoform	ND	3.1	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
Bromomethane	ND	16	30		µg/L	10	3/11/2021 1:37:19 AM	A75848
2-Butanone	ND	11	100		µg/L	10	3/11/2021 1:37:19 AM	A75848
Carbon disulfide	ND	4.4	100		µg/L	10	3/11/2021 1:37:19 AM	A75848
Carbon Tetrachloride	ND	1.8	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
Chlorobenzene	ND	1.4	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
Chloroethane	ND	3.8	20		µg/L	10	3/11/2021 1:37:19 AM	A75848
Chloroform	ND	1.3	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
Chloromethane	ND	4.0	30		µg/L	10	3/11/2021 1:37:19 AM	A75848
2-Chlorotoluene	ND	1.3	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
4-Chlorotoluene	ND	5.1	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
cis-1,2-DCE	18	3.9	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	3/11/2021 1:37:19 AM	A75848
Dibromochloromethane	ND	2.8	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
Dibromomethane	ND	3.1	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
Dichlorodifluoromethane	ND	4.4	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,1-Dichloroethane	78	2.7	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,1-Dichloroethene	58	1.3	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,2-Dichloropropane	ND	1.3	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,3-Dichloropropane	ND	1.8	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
2,2-Dichloropropane	ND	2.6	20		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,1-Dichloropropene	ND	1.8	10		µg/L	10	3/11/2021 1:37:19 AM	A75848

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:20:00 AM
Lab ID: 2103354-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	3.3	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
2-Hexanone	ND	18	100		µg/L	10	3/11/2021 1:37:19 AM	A75848
Isopropylbenzene	12	1.8	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
4-Isopropyltoluene	ND	2.0	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
4-Methyl-2-pentanone	ND	11	100		µg/L	10	3/11/2021 1:37:19 AM	A75848
Methylene Chloride	ND	4.0	30		µg/L	10	3/11/2021 1:37:19 AM	A75848
n-Butylbenzene	ND	2.5	30		µg/L	10	3/11/2021 1:37:19 AM	A75848
n-Propylbenzene	ND	1.8	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
sec-Butylbenzene	ND	6.1	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
Styrene	ND	1.3	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
tert-Butylbenzene	ND	2.4	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	3/11/2021 1:37:19 AM	A75848
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
trans-1,2-DCE	ND	4.9	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,2,3-Trichlorobenzene	ND	1.3	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,1,2-Trichloroethane	2.3	1.9	10	J	µg/L	10	3/11/2021 1:37:19 AM	A75848
Trichloroethene (TCE)	9.8	2.0	10	J	µg/L	10	3/11/2021 1:37:19 AM	A75848
Trichlorofluoromethane	ND	0.92	10		µg/L	10	3/11/2021 1:37:19 AM	A75848
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	3/11/2021 1:37:19 AM	A75848
Vinyl chloride	7.2	2.0	10	J	µg/L	10	3/11/2021 1:37:19 AM	A75848
Xylenes, Total	ND	5.5	15		µg/L	10	3/11/2021 1:37:19 AM	A75848
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	10	3/11/2021 1:37:19 AM	A75848
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	10	3/11/2021 1:37:19 AM	A75848
Surr: Dibromofluoromethane	102	0	70-130		%Rec	10	3/11/2021 1:37:19 AM	A75848
Surr: Toluene-d8	121	0	70-130		%Rec	10	3/11/2021 1:37:19 AM	A75848
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	4.1	0.080	0.50		mg/L	10	3/11/2021 1:37:19 AM	B75848
Surr: BFB	96.5	0	70-130		%Rec	10	3/11/2021 1:37:19 AM	B75848

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:20:00 AM
Lab ID: 2103354-005B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.32	0.075	0.085		mg/L	1	3/12/2021 11:24:19 AM	58585
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/12/2021 11:24:19 AM	58585
Surr: DNOP	75.7	0	45.1-141		%Rec	1	3/12/2021 11:24:19 AM	58585

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:20:00 AM
Lab ID: 2103354-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0063	0.0095		µg/L	1	3/16/2021 5:00:27 PM	58711

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:20:00 AM
Lab ID: 2103354-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Azobenzene	ND	0.55	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Benzoic acid	ND	1.1	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Bis(2-ethylhexyl)phthalate	4.9	4.5	10	J	µg/L	1	3/9/2021 9:42:18 PM	58560
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Carbazole	3.4	0.56	5.0	J	µg/L	1	3/9/2021 9:42:18 PM	58560
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/9/2021 9:42:18 PM	58560
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/9/2021 9:42:18 PM	58560
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Diethyl phthalate	ND	3.9	10		µg/L	1	3/9/2021 9:42:18 PM	58560
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/9/2021 9:42:18 PM	58560
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Isophorone	ND	0.40	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:20:00 AM
Lab ID: 2103354-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Phenol	8.4	0.33	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Pyridine	ND	0.93	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/9/2021 9:42:18 PM	58560
Surr: 2-Fluorophenol	32.7	0	15-88.8		%Rec	1	3/9/2021 9:42:18 PM	58560
Surr: Phenol-d5	27.0	0	15-71.9		%Rec	1	3/9/2021 9:42:18 PM	58560
Surr: 2,4,6-Tribromophenol	65.7	0	15-97.4		%Rec	1	3/9/2021 9:42:18 PM	58560
Surr: Nitrobenzene-d5	47.8	0	15-117		%Rec	1	3/9/2021 9:42:18 PM	58560
Surr: 2-Fluorobiphenyl	47.1	0	15-100		%Rec	1	3/9/2021 9:42:18 PM	58560
Surr: 4-Terphenyl-d14	68.8	0	15-120		%Rec	1	3/9/2021 9:42:18 PM	58560
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	0.18	0.034	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
1-Methylnaphthalene	0.28	0.024	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
Acenaphthene	0.10	0.031	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2021 7:26:00 PM	58576
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2021 7:26:00 PM	58576
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/16/2021 7:26:00 PM	58576
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/16/2021 7:26:00 PM	58576
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2021 7:26:00 PM	58576
Surr: Nitrobenzene-d5	14.0	0	26.3-112	S	%Rec	1	3/16/2021 7:26:00 PM	58576
Surr: 2-Fluorobiphenyl	49.5	0	21.1-110		%Rec	1	3/16/2021 7:26:00 PM	58576

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:20:00 AM
Lab ID: 2103354-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	94.0	0	17.6-167		%Rec	1	3/16/2021 7:26:00 PM	58576

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:20:00 AM
Lab ID: 2103354-005E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.22	0.50		mg/L	5	3/5/2021 7:08:30 PM	R75758
Chloride	820	12	25	*	mg/L	50	3/8/2021 7:37:35 PM	R75784
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/5/2021 7:08:30 PM	R75758
Bromide	1.5	0.25	0.50		mg/L	5	3/5/2021 7:08:30 PM	R75758
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	3/5/2021 7:08:30 PM	R75758
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/5/2021 7:08:30 PM	R75758
Sulfate	67	1.2	2.5		mg/L	5	3/5/2021 7:08:30 PM	R75758

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Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:20:00 AM
Lab ID: 2103354-005F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	3.2	0.074	0.20	*	mg/L	10	3/10/2021 1:48:02 PM	58618
Barium	0.31	0.0016	0.0030		mg/L	1	3/10/2021 1:46:38 PM	58618
Beryllium	ND	0.00088	0.0020		mg/L	1	3/10/2021 1:46:38 PM	58618
Boron	0.73	0.0074	0.040		mg/L	1	3/10/2021 1:46:38 PM	58618
Cadmium	ND	0.0015	0.0020		mg/L	1	3/10/2021 1:46:38 PM	58618
Chromium	ND	0.0021	0.0060		mg/L	1	3/10/2021 1:46:38 PM	58618
Cobalt	0.0054	0.0024	0.0060	J	mg/L	1	3/10/2021 1:46:38 PM	58618
Copper	0.0049	0.0047	0.0060	J	mg/L	1	3/10/2021 1:46:38 PM	58618
Iron	2.3	0.13	0.50	*	mg/L	10	3/10/2021 1:48:02 PM	58618
Manganese	2.8	0.0081	0.020	*	mg/L	10	3/10/2021 1:48:02 PM	58618
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/10/2021 1:46:38 PM	58618
Nickel	0.022	0.0033	0.010		mg/L	1	3/10/2021 1:46:38 PM	58618
Silver	0.0020	0.0013	0.0050	J	mg/L	1	3/10/2021 1:46:38 PM	58618
Zinc	ND	0.0064	0.010		mg/L	1	3/10/2021 1:46:38 PM	58618
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/10/2021 12:48:00 PM	58618
Arsenic	0.0027	0.0013	0.0050	J	mg/L	5	3/10/2021 1:07:07 PM	58618
Lead	0.0015	0.00017	0.0025	J	mg/L	5	3/10/2021 1:07:07 PM	58618
Selenium	ND	0.0033	0.0050		mg/L	5	3/10/2021 1:07:07 PM	58618
Thallium	ND	0.0012	0.0012		mg/L	5	3/10/2021 1:07:07 PM	58618
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 5:04:45 PM	58666

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PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 10:20:00 AM
Lab ID: 2103354-005G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/8/2021 1:30:14 PM	B75766
Barium	0.26	0.0011	0.0020		mg/L	1	3/8/2021 1:30:14 PM	B75766
Beryllium	ND	0.00088	0.0020		mg/L	1	3/8/2021 1:30:14 PM	B75766
Boron	0.71	0.0067	0.040		mg/L	1	3/8/2021 1:30:14 PM	B75766
Cadmium	ND	0.0012	0.0020		mg/L	1	3/8/2021 1:30:14 PM	B75766
Calcium	160	1.1	10		mg/L	10	3/8/2021 1:31:48 PM	B75766
Chromium	ND	0.0020	0.0060		mg/L	1	3/8/2021 1:30:14 PM	B75766
Cobalt	ND	0.0024	0.0060		mg/L	1	3/8/2021 1:30:14 PM	B75766
Copper	0.0095	0.0035	0.0060		mg/L	1	3/8/2021 1:30:14 PM	B75766
Iron	0.14	0.010	0.020		mg/L	1	3/8/2021 1:30:14 PM	B75766
Magnesium	31	0.067	1.0		mg/L	1	3/8/2021 1:30:14 PM	B75766
Manganese	2.7	0.0058	0.020	*	mg/L	10	3/8/2021 1:31:48 PM	B75766
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/8/2021 1:30:14 PM	B75766
Nickel	0.021	0.0033	0.010		mg/L	1	3/8/2021 1:30:14 PM	B75766
Potassium	1.8	0.16	1.0		mg/L	1	3/8/2021 1:30:14 PM	B75766
Silver	0.0013	0.0013	0.0050	J	mg/L	1	3/9/2021 1:12:23 PM	A75785
Sodium	630	1.4	10		mg/L	10	3/8/2021 1:31:48 PM	B75766
Zinc	0.0095	0.0060	0.010	J	mg/L	1	3/8/2021 1:30:14 PM	B75766
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/10/2021 4:30:36 PM	A75856
Arsenic	0.0011	0.00021	0.0010		mg/L	1	3/16/2021 1:26:00 PM	B75975
Lead	0.000046	0.000034	0.00050	J	mg/L	1	3/10/2021 4:30:36 PM	A75856
Selenium	ND	0.00066	0.0010		mg/L	1	3/16/2021 1:26:00 PM	B75975
Thallium	ND	0.000035	0.00050		mg/L	1	3/10/2021 4:30:36 PM	A75856
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 5:07:07 PM	58666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021
Lab ID: 2103354-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Toluene	ND	0.20	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Methyl tert-butyl ether (MTBE)	0.96	0.39	1.0	J	µg/L	1	3/11/2021 2:47:59 PM	A75890
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Naphthalene	ND	0.28	2.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Acetone	ND	2.3	10		µg/L	1	3/11/2021 2:47:59 PM	A75890
Bromobenzene	ND	0.28	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Bromoform	ND	0.31	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Bromomethane	ND	1.6	3.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
2-Butanone	ND	1.1	10		µg/L	1	3/11/2021 2:47:59 PM	A75890
Carbon disulfide	ND	0.44	10		µg/L	1	3/11/2021 2:47:59 PM	A75890
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Chloroethane	ND	0.38	2.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Chloromethane	ND	0.40	3.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Dibromomethane	ND	0.31	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,1-Dichloroethane	0.87	0.27	1.0	J	µg/L	1	3/11/2021 2:47:59 PM	A75890
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021
Lab ID: 2103354-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
2-Hexanone	ND	1.8	10		µg/L	1	3/11/2021 2:47:59 PM	A75890
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/11/2021 2:47:59 PM	A75890
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Styrene	ND	0.13	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/11/2021 2:47:59 PM	A75890
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/11/2021 2:47:59 PM	A75890
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	3/11/2021 2:47:59 PM	A75890
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	3/11/2021 2:47:59 PM	A75890
Surr: Dibromofluoromethane	114	0	70-130		%Rec	1	3/11/2021 2:47:59 PM	A75890
Surr: Toluene-d8	114	0	70-130		%Rec	1	3/11/2021 2:47:59 PM	A75890
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.023	0.0080	0.050	J	mg/L	1	3/11/2021 2:47:59 PM	B75890
Surr: BFB	97.7	0	70-130		%Rec	1	3/11/2021 2:47:59 PM	B75890

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021
Lab ID: 2103354-006B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	ND	0.075	0.085		mg/L	1	3/12/2021 11:48:17 AM	58585
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/12/2021 11:48:17 AM	58585
Surr: DNOP	82.7	0	45.1-141		%Rec	1	3/12/2021 11:48:17 AM	58585

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021
Lab ID: 2103354-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0062	0.0093		µg/L	1	3/16/2021 5:15:34 PM	58711

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021
Lab ID: 2103354-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Azobenzene	ND	0.55	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Benzoic acid	ND	1.1	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Bis(2-ethylhexyl)phthalate	4.8	4.5	10	J	µg/L	1	3/9/2021 10:23:07 PM	58560
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Carbazole	ND	0.56	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/9/2021 10:23:07 PM	58560
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/9/2021 10:23:07 PM	58560
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Diethyl phthalate	ND	3.9	10		µg/L	1	3/9/2021 10:23:07 PM	58560
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/9/2021 10:23:07 PM	58560
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Isophorone	ND	0.40	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021
Lab ID: 2103354-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Phenol	ND	0.33	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Pyridine	ND	0.93	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/9/2021 10:23:07 PM	58560
Surr: 2-Fluorophenol	45.8	0	15-88.8		%Rec	1	3/9/2021 10:23:07 PM	58560
Surr: Phenol-d5	38.6	0	15-71.9		%Rec	1	3/9/2021 10:23:07 PM	58560
Surr: 2,4,6-Tribromophenol	67.4	0	15-97.4		%Rec	1	3/9/2021 10:23:07 PM	58560
Surr: Nitrobenzene-d5	62.0	0	15-117		%Rec	1	3/9/2021 10:23:07 PM	58560
Surr: 2-Fluorobiphenyl	63.8	0	15-100		%Rec	1	3/9/2021 10:23:07 PM	58560
Surr: 4-Terphenyl-d14	82.3	0	15-120		%Rec	1	3/9/2021 10:23:07 PM	58560
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2021 8:09:00 PM	58576
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2021 8:09:00 PM	58576
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/16/2021 8:09:00 PM	58576
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/16/2021 8:09:00 PM	58576
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2021 8:09:00 PM	58576
Surr: Nitrobenzene-d5	51.0	0	26.3-112		%Rec	1	3/16/2021 8:09:00 PM	58576
Surr: 2-Fluorobiphenyl	38.0	0	21.1-110		%Rec	1	3/16/2021 8:09:00 PM	58576

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021
Lab ID: 2103354-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	85.0	0	17.6-167		%Rec	1	3/16/2021 8:09:00 PM	58576

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021
Lab ID: 2103354-006E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.22	0.50		mg/L	5	3/5/2021 7:33:13 PM	R75758
Chloride	3000	120	250	*	mg/L	500	3/8/2021 7:50:28 PM	R75784
Nitrogen, Nitrite (As N)	ND	0.28	2.0		mg/L	20	3/5/2021 7:45:33 PM	R75758
Bromide	1.4	0.25	0.50		mg/L	5	3/5/2021 7:33:13 PM	R75758
Nitrogen, Nitrate (As N)	0.13	0.10	0.50	J	mg/L	5	3/5/2021 7:33:13 PM	R75758
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/5/2021 7:33:13 PM	R75758
Sulfate	390	5.0	10	*	mg/L	20	3/5/2021 7:45:33 PM	R75758

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Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021
Lab ID: 2103354-006F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	1.9	0.037	0.10	*	mg/L	5	3/10/2021 1:51:14 PM	58618
Barium	0.085	0.0082	0.015		mg/L	5	3/10/2021 1:51:14 PM	58618
Beryllium	ND	0.0044	0.010		mg/L	5	3/10/2021 1:51:14 PM	58618
Boron	2.2	0.037	0.20		mg/L	5	3/10/2021 1:51:14 PM	58618
Cadmium	ND	0.0074	0.010		mg/L	5	3/10/2021 1:51:14 PM	58618
Chromium	ND	0.011	0.030		mg/L	5	3/10/2021 1:51:14 PM	58618
Cobalt	ND	0.012	0.030		mg/L	5	3/10/2021 1:51:14 PM	58618
Copper	ND	0.024	0.030		mg/L	5	3/10/2021 1:51:14 PM	58618
Iron	0.98	0.064	0.25	*	mg/L	5	3/10/2021 1:51:14 PM	58618
Manganese	0.042	0.0041	0.010		mg/L	5	3/10/2021 1:51:14 PM	58618
Molybdenum	ND	0.033	0.040		mg/L	5	3/10/2021 1:51:14 PM	58618
Nickel	ND	0.016	0.050		mg/L	5	3/10/2021 1:51:14 PM	58618
Silver	ND	0.0063	0.025		mg/L	5	3/10/2021 1:51:14 PM	58618
Zinc	ND	0.032	0.050		mg/L	5	3/10/2021 1:51:14 PM	58618
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/10/2021 1:09:31 PM	58618
Arsenic	ND	0.0013	0.0050		mg/L	5	3/10/2021 1:09:31 PM	58618
Lead	0.0011	0.00017	0.0025	J	mg/L	5	3/10/2021 1:09:31 PM	58618
Selenium	ND	0.0033	0.0050		mg/L	5	3/10/2021 1:09:31 PM	58618
Thallium	ND	0.0012	0.0012		mg/L	5	3/10/2021 1:09:31 PM	58618
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 5:09:31 PM	58666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021
Lab ID: 2103354-006G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/8/2021 1:33:22 PM	B75766
Barium	0.055	0.0011	0.0020		mg/L	1	3/8/2021 1:33:22 PM	B75766
Beryllium	ND	0.00088	0.0020		mg/L	1	3/8/2021 1:33:22 PM	B75766
Boron	2.0	0.067	0.40		mg/L	10	3/8/2021 1:34:57 PM	B75766
Cadmium	ND	0.0012	0.0020		mg/L	1	3/8/2021 1:33:22 PM	B75766
Calcium	250	1.1	10		mg/L	10	3/8/2021 1:34:57 PM	B75766
Chromium	ND	0.0020	0.0060		mg/L	1	3/8/2021 1:33:22 PM	B75766
Cobalt	ND	0.0024	0.0060		mg/L	1	3/8/2021 1:33:22 PM	B75766
Copper	0.0055	0.0035	0.0060	J	mg/L	1	3/8/2021 1:33:22 PM	B75766
Iron	ND	0.010	0.020		mg/L	1	3/8/2021 1:33:22 PM	B75766
Magnesium	49	0.067	1.0		mg/L	1	3/8/2021 1:33:22 PM	B75766
Manganese	0.00073	0.00058	0.0020	J	mg/L	1	3/8/2021 1:33:22 PM	B75766
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/8/2021 1:33:22 PM	B75766
Nickel	0.0071	0.0033	0.010	J	mg/L	1	3/8/2021 1:33:22 PM	B75766
Potassium	6.1	0.16	1.0		mg/L	1	3/8/2021 1:33:22 PM	B75766
Silver	0.0024	0.0013	0.0050	J	mg/L	1	3/9/2021 1:13:59 PM	A75785
Sodium	2100	6.9	50		mg/L	50	3/8/2021 1:44:27 PM	B75766
Zinc	0.011	0.0060	0.010		mg/L	1	3/8/2021 1:33:22 PM	B75766
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/10/2021 4:33:19 PM	A75856
Arsenic	ND	0.0010	0.0050		mg/L	5	3/10/2021 4:33:19 PM	A75856
Lead	ND	0.00017	0.0025		mg/L	5	3/10/2021 4:33:19 PM	A75856
Selenium	ND	0.0033	0.0050		mg/L	5	3/10/2021 4:33:19 PM	A75856
Thallium	ND	0.00017	0.0025		mg/L	5	3/10/2021 4:33:19 PM	A75856
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 5:16:43 PM	58666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Toluene	0.22	0.20	1.0	J	µg/L	1	3/11/2021 3:15:22 PM	A75890
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Naphthalene	ND	0.28	2.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Acetone	2.6	2.3	10	J	µg/L	1	3/11/2021 3:15:22 PM	A75890
Bromobenzene	ND	0.28	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Bromoform	ND	0.31	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Bromomethane	ND	1.6	3.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
2-Butanone	ND	1.1	10		µg/L	1	3/11/2021 3:15:22 PM	A75890
Carbon disulfide	ND	0.44	10		µg/L	1	3/11/2021 3:15:22 PM	A75890
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Chloroethane	ND	0.38	2.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Chloromethane	ND	0.40	3.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Dibromomethane	ND	0.31	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
2-Hexanone	ND	1.8	10		µg/L	1	3/11/2021 3:15:22 PM	A75890
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/11/2021 3:15:22 PM	A75890
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Styrene	ND	0.13	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/11/2021 3:15:22 PM	A75890
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/11/2021 3:15:22 PM	A75890
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	3/11/2021 3:15:22 PM	A75890
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	3/11/2021 3:15:22 PM	A75890
Surr: Dibromofluoromethane	116	0	70-130		%Rec	1	3/11/2021 3:15:22 PM	A75890
Surr: Toluene-d8	115	0	70-130		%Rec	1	3/11/2021 3:15:22 PM	A75890
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.023	0.0080	0.050	J	mg/L	1	3/11/2021 3:15:22 PM	B75890
Surr: BFB	98.8	0	70-130		%Rec	1	3/11/2021 3:15:22 PM	B75890

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-007B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	ND	0.075	0.085		mg/L	1	3/12/2021 12:12:18 PM	58585
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/12/2021 12:12:18 PM	58585
Surr: DNOP	78.1	0	45.1-141		%Rec	1	3/12/2021 12:12:18 PM	58585

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Azobenzene	ND	0.55	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Benzoic acid	ND	1.1	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Bis(2-ethylhexyl)phthalate	4.7	4.5	10	J	µg/L	1	3/9/2021 11:04:31 PM	58560
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Carbazole	ND	0.56	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/9/2021 11:04:31 PM	58560
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/9/2021 11:04:31 PM	58560
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Diethyl phthalate	ND	3.9	10		µg/L	1	3/9/2021 11:04:31 PM	58560
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/9/2021 11:04:31 PM	58560
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Isophorone	ND	0.40	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Phenol	ND	0.33	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Pyridine	ND	0.93	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/9/2021 11:04:31 PM	58560
Surr: 2-Fluorophenol	40.2	0	15-88.8		%Rec	1	3/9/2021 11:04:31 PM	58560
Surr: Phenol-d5	31.9	0	15-71.9		%Rec	1	3/9/2021 11:04:31 PM	58560
Surr: 2,4,6-Tribromophenol	46.5	0	15-97.4		%Rec	1	3/9/2021 11:04:31 PM	58560
Surr: Nitrobenzene-d5	54.0	0	15-117		%Rec	1	3/9/2021 11:04:31 PM	58560
Surr: 2-Fluorobiphenyl	50.8	0	15-100		%Rec	1	3/9/2021 11:04:31 PM	58560
Surr: 4-Terphenyl-d14	65.2	0	15-120		%Rec	1	3/9/2021 11:04:31 PM	58560
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
Acenaphthene	ND	0.031	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
Fluorene	ND	0.031	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
Phenanthrene	ND	0.057	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
Anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
Fluoranthene	ND	0.10	0.20		µg/L	1	3/16/2021 8:51:00 PM	58576
Pyrene	ND	0.16	0.20		µg/L	1	3/16/2021 8:51:00 PM	58576
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
Chrysene	ND	0.024	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/16/2021 8:51:00 PM	58576
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/16/2021 8:51:00 PM	58576
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/16/2021 8:51:00 PM	58576
Surr: Nitrobenzene-d5	53.5	0	26.3-112		%Rec	1	3/16/2021 8:51:00 PM	58576
Surr: 2-Fluorobiphenyl	52.5	0	21.1-110		%Rec	1	3/16/2021 8:51:00 PM	58576

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	118	0	17.6-167		%Rec	1	3/16/2021 8:51:00 PM	58576

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.043	0.10		mg/L	1	3/5/2021 7:57:55 PM	R75758
Chloride	ND	0.25	0.50		mg/L	1	3/5/2021 7:57:55 PM	R75758
Nitrogen, Nitrite (As N)	ND	0.014	0.10		mg/L	1	3/5/2021 7:57:55 PM	R75758
Bromide	ND	0.050	0.10		mg/L	1	3/5/2021 7:57:55 PM	R75758
Nitrogen, Nitrate (As N)	0.039	0.020	0.10	J	mg/L	1	3/5/2021 7:57:55 PM	R75758
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	3/5/2021 7:57:55 PM	R75758
Sulfate	ND	0.25	0.50		mg/L	1	3/5/2021 7:57:55 PM	R75758

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-007E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	ND	0.0074	0.020		mg/L	1	3/8/2021 12:14:14 PM	A75766
Barium	ND	0.0016	0.0030		mg/L	1	3/8/2021 12:14:14 PM	A75766
Beryllium	ND	0.00088	0.0020		mg/L	1	3/8/2021 12:14:14 PM	A75766
Boron	ND	0.0074	0.040		mg/L	1	3/8/2021 12:14:14 PM	A75766
Cadmium	ND	0.0015	0.0020		mg/L	1	3/8/2021 12:14:14 PM	A75766
Chromium	ND	0.0021	0.0060		mg/L	1	3/8/2021 12:14:14 PM	A75766
Cobalt	ND	0.0024	0.0060		mg/L	1	3/8/2021 12:14:14 PM	A75766
Copper	ND	0.0047	0.0060		mg/L	1	3/8/2021 12:14:14 PM	A75766
Iron	ND	0.013	0.050		mg/L	1	3/8/2021 12:14:14 PM	A75766
Manganese	ND	0.00081	0.0020		mg/L	1	3/8/2021 12:14:14 PM	A75766
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/8/2021 12:14:14 PM	A75766
Nickel	ND	0.0033	0.010		mg/L	1	3/8/2021 12:14:14 PM	A75766
Silver	ND	0.0013	0.0050		mg/L	1	3/8/2021 12:14:14 PM	A75766
Zinc	ND	0.0064	0.010		mg/L	1	3/8/2021 12:14:14 PM	A75766
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/11/2021 1:24:56 PM	A75881
Arsenic	ND	0.00026	0.0010		mg/L	1	3/11/2021 1:24:56 PM	A75881
Lead	ND	0.000034	0.00050		mg/L	1	3/11/2021 1:24:56 PM	A75881
Selenium	ND	0.00066	0.0010		mg/L	1	3/11/2021 1:24:56 PM	A75881
Thallium	ND	0.00025	0.00025		mg/L	1	3/11/2021 1:24:56 PM	A75881
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 5:19:08 PM	58666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:00:00 AM
Lab ID: 2103354-007F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/8/2021 1:46:01 PM	B75766
Barium	ND	0.0011	0.0020		mg/L	1	3/8/2021 1:46:01 PM	B75766
Beryllium	ND	0.00088	0.0020		mg/L	1	3/8/2021 1:46:01 PM	B75766
Boron	ND	0.0067	0.040		mg/L	1	3/8/2021 1:46:01 PM	B75766
Cadmium	ND	0.0012	0.0020		mg/L	1	3/8/2021 1:46:01 PM	B75766
Calcium	ND	0.11	1.0		mg/L	1	3/8/2021 1:46:01 PM	B75766
Chromium	ND	0.0020	0.0060		mg/L	1	3/8/2021 1:46:01 PM	B75766
Cobalt	ND	0.0024	0.0060		mg/L	1	3/9/2021 1:15:34 PM	A75785
Copper	ND	0.0035	0.0060		mg/L	1	3/8/2021 1:46:01 PM	B75766
Iron	ND	0.010	0.020		mg/L	1	3/8/2021 1:46:01 PM	B75766
Magnesium	ND	0.067	1.0		mg/L	1	3/8/2021 1:46:01 PM	B75766
Manganese	ND	0.00058	0.0020		mg/L	1	3/8/2021 1:46:01 PM	B75766
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/8/2021 1:46:01 PM	B75766
Nickel	ND	0.0033	0.010		mg/L	1	3/8/2021 1:46:01 PM	B75766
Potassium	ND	0.16	1.0		mg/L	1	3/8/2021 1:46:01 PM	B75766
Silver	ND	0.0013	0.0050		mg/L	1	3/9/2021 1:15:34 PM	A75785
Sodium	ND	0.14	1.0		mg/L	1	3/8/2021 1:46:01 PM	B75766
Zinc	0.012	0.0060	0.010		mg/L	1	3/8/2021 1:46:01 PM	B75766
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/16/2021 1:28:43 PM	B75975
Arsenic	ND	0.00021	0.0010		mg/L	1	3/16/2021 1:28:43 PM	B75975
Lead	ND	0.000034	0.00050		mg/L	1	3/16/2021 1:28:43 PM	B75975
Selenium	ND	0.00066	0.0010		mg/L	1	3/16/2021 1:28:43 PM	B75975
Thallium	ND	0.000035	0.00050		mg/L	1	3/16/2021 1:28:43 PM	B75975
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/11/2021 5:21:32 PM	58666

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:15:00 AM
Lab ID: 2103354-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Toluene	0.24	0.20	1.0	J	µg/L	1	3/11/2021 5:31:33 PM	A75890
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Naphthalene	ND	0.28	2.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Acetone	3.0	2.3	10	J	µg/L	1	3/11/2021 5:31:33 PM	A75890
Bromobenzene	ND	0.28	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Bromoform	ND	0.31	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Bromomethane	ND	1.6	3.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
2-Butanone	ND	1.1	10		µg/L	1	3/11/2021 5:31:33 PM	A75890
Carbon disulfide	ND	0.44	10		µg/L	1	3/11/2021 5:31:33 PM	A75890
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Chloroethane	ND	0.38	2.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Chloromethane	ND	0.40	3.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Dibromomethane	ND	0.31	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 3-5-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/5/2021 9:15:00 AM
Lab ID: 2103354-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
2-Hexanone	ND	1.8	10		µg/L	1	3/11/2021 5:31:33 PM	A75890
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/11/2021 5:31:33 PM	A75890
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Styrene	ND	0.13	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/11/2021 5:31:33 PM	A75890
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/11/2021 5:31:33 PM	A75890
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%Rec	1	3/11/2021 5:31:33 PM	A75890
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	3/11/2021 5:31:33 PM	A75890
Surr: Dibromofluoromethane	110	0	70-130		%Rec	1	3/11/2021 5:31:33 PM	A75890
Surr: Toluene-d8	116	0	70-130		%Rec	1	3/11/2021 5:31:33 PM	A75890

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: TB
Project: 2021 GW Sampling 1st Quarter
Collection Date:
Lab ID: 2103354-009A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Toluene	ND	0.20	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Naphthalene	ND	0.28	2.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Acetone	3.1	2.3	10	J	µg/L	1	3/11/2021 5:59:06 PM	A75890
Bromobenzene	ND	0.28	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Bromoform	ND	0.31	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Bromomethane	ND	1.6	3.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
2-Butanone	1.1	1.1	10	J	µg/L	1	3/11/2021 5:59:06 PM	A75890
Carbon disulfide	ND	0.44	10		µg/L	1	3/11/2021 5:59:06 PM	A75890
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Chloroethane	ND	0.38	2.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Chloromethane	ND	0.40	3.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Dibromomethane	ND	0.31	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103354**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: TB
Project: 2021 GW Sampling 1st Quarter
Collection Date:
Lab ID: 2103354-009A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
2-Hexanone	ND	1.8	10		µg/L	1	3/11/2021 5:59:06 PM	A75890
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/11/2021 5:59:06 PM	A75890
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Styrene	ND	0.13	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/11/2021 5:59:06 PM	A75890
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/11/2021 5:59:06 PM	A75890
Surr: 1,2-Dichloroethane-d4	116	0	70-130		%Rec	1	3/11/2021 5:59:06 PM	A75890
Surr: 4-Bromofluorobenzene	109	0	70-130		%Rec	1	3/11/2021 5:59:06 PM	A75890
Surr: Dibromofluoromethane	115	0	70-130		%Rec	1	3/11/2021 5:59:06 PM	A75890
Surr: Toluene-d8	111	0	70-130		%Rec	1	3/11/2021 5:59:06 PM	A75890

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680314** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **A75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680316** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.0091	0.020	0.01000	0	91.5	50	150			J
Barium	0.0017	0.0030	0.002000	0	85.1	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	92.2	50	150			J
Boron	0.037	0.040	0.04000	0	92.0	50	150			J
Cadmium	0.0018	0.0020	0.002000	0	91.3	50	150			J
Chromium	0.0056	0.0060	0.006000	0	93.6	50	150			J
Cobalt	0.0064	0.0060	0.006000	0	107	50	150			
Copper	0.0053	0.0060	0.006000	0	88.8	50	150			J
Iron	0.021	0.050	0.02000	0	104	50	150			J
Manganese	0.0019	0.0020	0.002000	0	92.6	50	150			J
Molybdenum	0.0083	0.0080	0.008000	0	103	50	150			
Nickel	0.0030	0.010	0.005000	0	59.6	50	150			J
Zinc	0.0086	0.010	0.01000	0	86.2	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680318** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.55	0.020	0.5000	0	110	85	115			
Barium	0.51	0.0030	0.5000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680318** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.53	0.0020	0.5000	0	105	85	115			
Boron	0.52	0.040	0.5000	0	103	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.50	0.0060	0.5000	0	99.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.9	85	115			
Copper	0.49	0.0060	0.5000	0	99.0	85	115			
Iron	0.49	0.050	0.5000	0	98.7	85	115			
Manganese	0.50	0.0020	0.5000	0	99.3	85	115			
Molybdenum	0.52	0.0080	0.5000	0	104	85	115			
Nickel	0.48	0.010	0.5000	0	95.5	85	115			
Zinc	0.51	0.010	0.5000	0	103	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680346** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **A75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680348** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.0047	0.0050	0.005000	0	93.2	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680350** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.093	0.0050	0.1000	0	92.7	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A75785** RunNo: **75785**
Prep Date: Analysis Date: **3/9/2021** SeqNo: **2681793** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.0060								
Silver	ND	0.0050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **A75785** RunNo: **75785**
Prep Date: Analysis Date: **3/9/2021** SeqNo: **2681795** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.0054	0.0060	0.006000	0	89.5	50	150			J
Silver	0.0050	0.0050	0.005000	0	100	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A75785** RunNo: **75785**
Prep Date: Analysis Date: **3/9/2021** SeqNo: **2681797** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.49	0.0060	0.5000	0	97.4	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			

Sample ID: **MB-58618** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **58618** RunNo: **75830**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2682954** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS-58618** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **58618** RunNo: **75830**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2682955** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.013	0.020	0.01000	0	133	50	150			J
Barium	0.0018	0.0030	0.002000	0	90.2	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	106	50	150			
Boron	0.041	0.040	0.04000	0	101	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LLLCS-58618** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **58618** RunNo: **75830**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2682955** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.0015	0.0020	0.002000	0	75.7	50	150			J
Chromium	0.0061	0.0060	0.006000	0	101	50	150			
Cobalt	0.0064	0.0060	0.006000	0	107	50	150			
Copper	0.0066	0.0060	0.006000	0	110	50	150			
Iron	0.027	0.050	0.02000	0	135	50	150			J
Manganese	0.0025	0.0020	0.002000	0	123	50	150			
Molybdenum	0.0075	0.0080	0.008000	0	94.3	50	150			J
Nickel	0.0049	0.010	0.005000	0	98.3	50	150			J
Silver	0.0051	0.0050	0.005000	0	102	50	150			
Zinc	0.012	0.010	0.01000	0	121	50	150			

Sample ID: **LCS-58618** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **58618** RunNo: **75830**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2682956** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.57	0.020	0.5000	0	115	85	115			
Barium	0.52	0.0030	0.5000	0	105	85	115			
Beryllium	0.53	0.0020	0.5000	0	107	85	115			
Boron	0.52	0.040	0.5000	0	104	85	115			
Cadmium	0.52	0.0020	0.5000	0	103	85	115			
Chromium	0.50	0.0060	0.5000	0	99.9	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.9	85	115			
Copper	0.52	0.0060	0.5000	0	103	85	115			
Iron	0.51	0.050	0.5000	0	103	85	115			
Manganese	0.51	0.0020	0.5000	0	102	85	115			
Molybdenum	0.52	0.0080	0.5000	0	103	85	115			
Nickel	0.49	0.010	0.5000	0	97.1	85	115			
Silver	0.095	0.0050	0.1000	0	95.2	85	115			
Zinc	0.52	0.010	0.5000	0	105	85	115			

Sample ID: **2103354-002FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-40** Batch ID: **58618** RunNo: **75830**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2683754** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	4.0	0.10	0.5000	1.751	445	70	130			S
Barium	0.57	0.015	0.5000	0.07974	98.4	70	130			
Beryllium	0.51	0.010	0.5000	0	102	70	130			
Boron	2.8	0.20	0.5000	2.232	104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103354-002FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-40** Batch ID: **58618** RunNo: **75830**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2683754** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.48	0.010	0.5000	0	95.0	70	130			
Chromium	0.48	0.030	0.5000	0	96.1	70	130			
Cobalt	0.48	0.030	0.5000	0	95.3	70	130			
Copper	0.56	0.030	0.5000	0	112	70	130			
Iron	1.7	0.25	0.5000	0.8790	167	70	130			S
Manganese	0.52	0.010	0.5000	0.03097	97.1	70	130			
Molybdenum	0.51	0.040	0.5000	0	101	70	130			
Nickel	0.47	0.050	0.5000	0	94.0	70	130			
Silver	0.11	0.025	0.1000	0	107	70	130			
Zinc	0.47	0.050	0.5000	0	94.8	70	130			

Sample ID: **2103354-002FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-40** Batch ID: **58618** RunNo: **75830**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2683755** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	3.8	0.10	0.5000	1.751	415	70	130	3.84	20	S
Barium	0.57	0.015	0.5000	0.07974	97.4	70	130	0.881	20	
Beryllium	0.51	0.010	0.5000	0	103	70	130	0.737	20	
Boron	2.7	0.20	0.5000	2.232	92.7	70	130	2.06	20	
Cadmium	0.47	0.010	0.5000	0	93.1	70	130	2.04	20	
Chromium	0.47	0.030	0.5000	0	94.1	70	130	2.12	20	
Cobalt	0.46	0.030	0.5000	0	92.9	70	130	2.58	20	
Copper	0.56	0.030	0.5000	0	112	70	130	0.203	20	
Iron	1.7	0.25	0.5000	0.8790	155	70	130	3.46	20	S
Manganese	0.51	0.010	0.5000	0.03097	96.1	70	130	0.935	20	
Molybdenum	0.49	0.040	0.5000	0	97.3	70	130	3.84	20	
Nickel	0.46	0.050	0.5000	0	92.5	70	130	1.61	20	
Silver	0.11	0.025	0.1000	0	106	70	130	0.894	20	
Zinc	0.47	0.050	0.5000	0	94.3	70	130	0.543	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A75766**	RunNo: **75766**
Prep Date:	Analysis Date: **3/8/2021**	SeqNo: **2680315** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A75766**	RunNo: **75766**
Prep Date:	Analysis Date: **3/8/2021**	SeqNo: **2680317** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.0091	0.020	0.01000	0	91.5	50	150			J
Barium	0.0017	0.0020	0.002000	0	85.1	50	150			J
Beryllium	0.0018	0.0020	0.002000	0	92.2	50	150			J
Boron	0.037	0.040	0.04000	0	92.0	50	150			J
Cadmium	0.0018	0.0020	0.002000	0	91.3	50	150			J
Chromium	0.0056	0.0060	0.006000	0	93.6	50	150			J
Cobalt	0.0064	0.0060	0.006000	0	107	50	150			
Copper	0.0053	0.0060	0.006000	0	88.8	50	150			J
Iron	0.021	0.020	0.02000	0	104	50	150			
Manganese	0.0019	0.0020	0.002000	0	92.6	50	150			J
Molybdenum	0.0083	0.0080	0.008000	0	103	50	150			
Nickel	0.0030	0.010	0.005000	0	59.6	50	150			J
Zinc	0.0086	0.010	0.01000	0	86.2	50	150			J

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A75766**	RunNo: **75766**
Prep Date:	Analysis Date: **3/8/2021**	SeqNo: **2680347** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680349** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.0047	0.0050	0.005000	0	93.2	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680351** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.093	0.0050	0.1000	0	92.7	85	115			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680367** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.55	0.020	0.5000	0	110	85	115			
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.53	0.0020	0.5000	0	105	85	115			
Boron	0.52	0.040	0.5000	0	103	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.50	0.0060	0.5000	0	99.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.9	85	115			
Copper	0.49	0.0060	0.5000	0	99.0	85	115			
Iron	0.49	0.020	0.5000	0	98.7	85	115			
Manganese	0.50	0.0020	0.5000	0	99.3	85	115			
Molybdenum	0.52	0.0080	0.5000	0	104	85	115			
Nickel	0.48	0.010	0.5000	0	95.5	85	115			
Zinc	0.51	0.010	0.5000	0	103	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680368** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B75766**	RunNo: **75766**
Prep Date:	Analysis Date: **3/8/2021**	SeqNo: **2680368** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B75766**	RunNo: **75766**
Prep Date:	Analysis Date: **3/8/2021**	SeqNo: **2680369** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.010	0.020	0.01000	0	101	50	150			J
Barium	0.0026	0.0020	0.002000	0	128	50	150			
Beryllium	0.0015	0.0020	0.002000	0	75.2	50	150			J
Boron	0.037	0.040	0.04000	0	91.6	50	150			J
Cadmium	0.0013	0.0020	0.002000	0	65.1	50	150			J
Calcium	0.53	1.0	0.5000	0	105	50	150			J
Chromium	0.0057	0.0060	0.006000	0	94.2	50	150			J
Cobalt	0.0058	0.0060	0.006000	0	97.5	50	150			J
Copper	0.0059	0.0060	0.006000	0	97.7	50	150			J
Iron	0.021	0.020	0.02000	0	104	50	150			
Magnesium	0.52	1.0	0.5000	0	104	50	150			J
Manganese	0.0019	0.0020	0.002000	0	96.6	50	150			J
Molybdenum	0.0082	0.0080	0.008000	0	102	50	150			
Nickel	0.0036	0.010	0.005000	0	72.2	50	150			J
Potassium	0.39	1.0	0.5000	0	77.6	50	150			J
Sodium	0.48	1.0	0.5000	0	96.6	50	150			J
Zinc	0.0088	0.010	0.01000	0	87.5	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B75766**	RunNo: **75766**
Prep Date:	Analysis Date: **3/8/2021**	SeqNo: **2680370** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	112	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680370** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.52	0.0020	0.5000	0	103	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Boron	0.52	0.040	0.5000	0	103	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Calcium	50	1.0	50.00	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	99.4	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.2	85	115			
Copper	0.51	0.0060	0.5000	0	102	85	115			
Iron	0.50	0.020	0.5000	0	99.1	85	115			
Magnesium	51	1.0	50.00	0	101	85	115			
Manganese	0.50	0.0020	0.5000	0	100	85	115			
Molybdenum	0.52	0.0080	0.5000	0	104	85	115			
Nickel	0.48	0.010	0.5000	0	95.6	85	115			
Potassium	50	1.0	50.00	0	101	85	115			
Sodium	50	1.0	50.00	0	101	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Sample ID: **2103354-007FMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-5-21** Batch ID: **B75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680414** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.59	0.020	0.5000	0	118	70	130			
Barium	0.50	0.0020	0.5000	0	101	70	130			
Beryllium	0.53	0.0020	0.5000	0	106	70	130			
Boron	0.53	0.040	0.5000	0	105	70	130			
Cadmium	0.50	0.0020	0.5000	0	99.7	70	130			
Calcium	51	1.0	50.00	0	102	70	130			
Chromium	0.48	0.0060	0.5000	0	96.8	70	130			
Copper	0.52	0.0060	0.5000	0	103	70	130			
Iron	0.50	0.020	0.5000	0	99.3	70	130			
Magnesium	53	1.0	50.00	0	106	70	130			
Manganese	0.49	0.0020	0.5000	0	98.9	70	130			
Molybdenum	0.50	0.0080	0.5000	0	101	70	130			
Nickel	0.46	0.010	0.5000	0	92.8	70	130			
Potassium	53	1.0	50.00	0	106	70	130			
Sodium	52	1.0	50.00	0	104	70	130			
Zinc	0.52	0.010	0.5000	0.01231	101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103354-007FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-5-21** Batch ID: **B75766** RunNo: **75766**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2680415** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.59	0.020	0.5000	0	118	70	130	0.227	20	
Barium	0.49	0.0020	0.5000	0	98.6	70	130	2.29	20	
Beryllium	0.51	0.0020	0.5000	0	103	70	130	2.54	20	
Boron	0.51	0.040	0.5000	0	102	70	130	2.93	20	
Cadmium	0.48	0.0020	0.5000	0	96.9	70	130	2.77	20	
Calcium	49	1.0	50.00	0	98.7	70	130	3.59	20	
Chromium	0.47	0.0060	0.5000	0	93.4	70	130	3.61	20	
Copper	0.51	0.0060	0.5000	0	102	70	130	1.16	20	
Iron	0.47	0.020	0.5000	0	93.7	70	130	5.80	20	
Magnesium	51	1.0	50.00	0	102	70	130	3.96	20	
Manganese	0.49	0.0020	0.5000	0	97.1	70	130	1.90	20	
Molybdenum	0.49	0.0080	0.5000	0	97.8	70	130	2.72	20	
Nickel	0.45	0.010	0.5000	0	90.4	70	130	2.64	20	
Potassium	51	1.0	50.00	0	103	70	130	3.21	20	
Sodium	50	1.0	50.00	0	99.8	70	130	4.09	20	
Zinc	0.51	0.010	0.5000	0.01231	99.0	70	130	2.02	20	

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A75785** RunNo: **75785**
Prep Date: Analysis Date: **3/9/2021** SeqNo: **2681794** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.0060								
Silver	ND	0.0050								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A75785** RunNo: **75785**
Prep Date: Analysis Date: **3/9/2021** SeqNo: **2681796** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.0054	0.0060	0.006000	0	89.5	50	150			J
Silver	0.0050	0.0050	0.005000	0	100	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A75785** RunNo: **75785**
Prep Date: Analysis Date: **3/9/2021** SeqNo: **2681798** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.49	0.0060	0.5000	0	97.4	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58618** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **58618** RunNo: **75831**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2682968** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: **MSLLLCS-58618** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **58618** RunNo: **75831**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2682970** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00093	0.0010	0.001000	0	93.1	50	150			J
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00050	0.00050	0.0005000	0	101	50	150			
Selenium	0.0011	0.0010	0.001000	0	112	50	150			

Sample ID: **MSLCS-58618** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **58618** RunNo: **75831**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2682972** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.024	0.0010	0.02500	0	98.0	85	115			
Lead	0.012	0.00050	0.01250	0	99.2	85	115			
Selenium	0.024	0.0010	0.02500	0	96.2	85	115			
Thallium	0.012	0.00025	0.01250	0	99.0	85	115			

Sample ID: **MSLLLCS-TL-58618** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **58618** RunNo: **75831**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2682973** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	0.00025	0.00025	0.0002500	0	102	50	150			

Sample ID: **2103354-001FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-31** Batch ID: **58618** RunNo: **75831**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2683527** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103354-001FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-31** Batch ID: **58618** RunNo: **75831**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2683527** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.032	0.0010	0.02500	0.0006326	124	70	130			
Lead	0.011	0.00050	0.01250	0.0005369	81.5	70	130			
Selenium	0.031	0.0010	0.02500	0.0006725	121	70	130			
Thallium	0.010	0.00025	0.01250	0	83.6	70	130			

Sample ID: **2103354-001FMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-31** Batch ID: **58618** RunNo: **75831**
Prep Date: **3/9/2021** Analysis Date: **3/10/2021** SeqNo: **2683528** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.8	70	130	0.433	20	
Arsenic	0.032	0.0010	0.02500	0.0006326	126	70	130	1.43	20	
Lead	0.011	0.00050	0.01250	0.0005369	81.7	70	130	0.227	20	
Selenium	0.030	0.0010	0.02500	0.0006725	117	70	130	2.87	20	
Thallium	0.010	0.00025	0.01250	0	83.9	70	130	0.280	20	

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **A75881** RunNo: **75881**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2684757** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **A75881** RunNo: **75881**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2684758** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00090	0.0010	0.001000	0	89.8	50	150			J
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00052	0.00050	0.0005000	0	103	50	150			
Selenium	0.0011	0.0010	0.001000	0	113	50	150			
Thallium	0.00051	0.00025	0.0005000	0	103	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**							
Client ID: **LCSW**	Batch ID: **A75881**	RunNo: **75881**							
Prep Date:	Analysis Date: **3/11/2021**	SeqNo: **2684759**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.2	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.024	0.0010	0.02500	0	96.8	85	115			
Thallium	0.013	0.00025	0.01250	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **A75856** RunNo: **75856**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2683969** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00050								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A75856** RunNo: **75856**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2683970** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	109	50	150			
Arsenic	0.0010	0.0010	0.001000	0	101	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.00081	0.0010	0.001000	0	81.0	50	150			J
Thallium	0.00050	0.00050	0.0005000	0	100	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A75856** RunNo: **75856**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2683976** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.2	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.012	0.00050	0.01250	0	97.2	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			
Thallium	0.012	0.00050	0.01250	0	97.7	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B75975** RunNo: **75975**
Prep Date: Analysis Date: **3/16/2021** SeqNo: **2688857** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B75975** RunNo: **75975**
Prep Date: Analysis Date: **3/16/2021** SeqNo: **2688858** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00094	0.0010	0.001000	0	93.8	50	150			J
Arsenic	0.00096	0.0010	0.001000	0	96.2	50	150			J
Lead	0.00049	0.00050	0.0005000	0	98.4	50	150			J
Selenium	0.00077	0.0010	0.001000	0	76.7	50	150			J
Thallium	0.00050	0.00050	0.0005000	0	99.2	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B75975** RunNo: **75975**
Prep Date: Analysis Date: **3/16/2021** SeqNo: **2688859** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	94.8	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.6	85	115			
Lead	0.012	0.00050	0.01250	0	96.7	85	115			
Selenium	0.024	0.0010	0.02500	0	96.8	85	115			
Thallium	0.012	0.00050	0.01250	0	97.2	85	115			

Sample ID: **2103354-007FMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB 3-5-21** Batch ID: **B75975** RunNo: **75975**
Prep Date: Analysis Date: **3/16/2021** SeqNo: **2688881** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.046	0.0010	0.05000	0	92.8	70	130			
Arsenic	0.048	0.0010	0.05000	0	95.7	70	130			
Lead	0.023	0.00050	0.02500	0	94.0	70	130			
Selenium	0.048	0.0010	0.05000	0	96.1	70	130			
Thallium	0.024	0.00050	0.02500	0	94.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**

08-Apr-21

Client: Marathon

Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58666** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **58666** RunNo: **75868**
Prep Date: **3/11/2021** Analysis Date: **3/11/2021** SeqNo: **2685557** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-58666** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **58666** RunNo: **75868**
Prep Date: **3/11/2021** Analysis Date: **3/11/2021** SeqNo: **2685558** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00012	0.00020	0.0001500	0	81.6	50	150			J

Sample ID: **LCS-58666** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **58666** RunNo: **75868**
Prep Date: **3/11/2021** Analysis Date: **3/11/2021** SeqNo: **2685559** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.5	85	115			

Sample ID: **2103354-006FMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP 3-5-21** Batch ID: **58666** RunNo: **75868**
Prep Date: **3/11/2021** Analysis Date: **3/11/2021** SeqNo: **2685595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	75	125			

Sample ID: **2103354-006FMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **DUP 3-5-21** Batch ID: **58666** RunNo: **75868**
Prep Date: **3/11/2021** Analysis Date: **3/11/2021** SeqNo: **2685596** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.9	75	125	1.69	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R75758** RunNo: **75758**
Prep Date: Analysis Date: **3/5/2021** SeqNo: **2679967** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R75758** RunNo: **75758**
Prep Date: Analysis Date: **3/5/2021** SeqNo: **2679968** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	108	90	110			
Chloride	4.7	0.50	5.000	0	94.3	90	110			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.0	90	110			
Bromide	2.4	0.10	2.500	0	96.9	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.4	90	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.4	90	110			
Sulfate	9.6	0.50	10.00	0	95.8	90	110			

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R75784** RunNo: **75784**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2681160** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R75784** RunNo: **75784**
Prep Date: Analysis Date: **3/8/2021** SeqNo: **2681161** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58710** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **58710** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687471** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-58711** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687472** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-58710** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **58710** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687473** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-58711** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687474** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-58710** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **58710** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687475** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	107	70	130			

Sample ID: **LCS-58711** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687476** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	114	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCSD-58711**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**							
Client ID: **LCSS02**	Batch ID: **58711**	RunNo: **75943**							
Prep Date: **3/15/2021**	Analysis Date: **3/15/2021**	SeqNo: **2687477**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	107	70	130	5.93	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS-58585**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range**							
Client ID: **LCSW**	Batch ID: **58585**	RunNo: **76430**							
Prep Date: **3/8/2021**	Analysis Date: **3/12/2021**	SeqNo: **2707270**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.28	0.085	0.6000	0	46.9	21.1	126			
Surr: DNOP	0.048		0.06000		79.5	45.1	141			

Sample ID: **LCSD-58585**	SampType: **LCSD**	TestCode: **EPA Method 8015D: Diesel Range**							
Client ID: **LCSS02**	Batch ID: **58585**	RunNo: **76430**							
Prep Date: **3/8/2021**	Analysis Date: **3/12/2021**	SeqNo: **2707272**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.26	0.085	0.6000	0	44.0	21.1	126	200	20	R
Surr: DNOP	0.050		0.06000		83.6	45.1	141	0	0	

Sample ID: **MB-58585**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range**							
Client ID: **PBW**	Batch ID: **58585**	RunNo: **76430**							
Prep Date: **3/8/2021**	Analysis Date: **3/12/2021**	SeqNo: **2707274**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.085								
Motor Oil Range Organics (MRO)	ND	0.60								
Surr: DNOP	0.10		0.1200		85.1	45.1	141			

NOTES:
See the Case Narrative Regarding the DRO results listed above.
See the Case Narrative Regarding the DRO results listed above.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **A75848** RunNo: **75848**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2683772** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	89.0	70	130			
Toluene	19	1.0	20.00	0	97.2	70	130			
Chlorobenzene	18	1.0	20.00	0	90.5	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	87.8	70	130			
Trichloroethene (TCE)	16	1.0	20.00	0	80.1	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	11		10.00		111	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A75848** RunNo: **75848**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2683791** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A75848**	RunNo: **75848**
Prep Date:	Analysis Date: **3/10/2021**	SeqNo: **2683791** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A75848** RunNo: **75848**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2683791** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		113	70	130			
Surr: Toluene-d8	11		10.00		115	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **A75890** RunNo: **75890**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685216** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	17	1.0	20.00	0	83.8	70	130			
Toluene	18	1.0	20.00	0	88.9	70	130			
Chlorobenzene	16	1.0	20.00	0	82.1	70	130			
1,1-Dichloroethene	16	1.0	20.00	0	78.4	70	130			
Trichloroethene (TCE)	15	1.0	20.00	0	73.3	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		114	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		114	70	130			
Surr: Toluene-d8	11		10.00		115	70	130			

Sample ID: **2103354-007a ms** SampType: **MS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **EB 3-5-21** Batch ID: **A75890** RunNo: **75890**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685223** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	17	1.0	20.00	0	87.4	70	130			
Toluene	18	1.0	20.00	0.2202	90.8	70	130			
Chlorobenzene	17	1.0	20.00	0	84.8	70	130			
1,1-Dichloroethene	16	1.0	20.00	0	80.7	70	130			
Trichloroethene (TCE)	15	1.0	20.00	0	76.7	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		113	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	11		10.00		115	70	130			
Surr: Toluene-d8	11		10.00		111	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103354-007a msd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **EB 3-5-21** Batch ID: **A75890** RunNo: **75890**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685224** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	89.4	70	130	2.24	20	
Toluene	18	1.0	20.00	0.2202	89.6	70	130	1.29	20	
Chlorobenzene	17	1.0	20.00	0	85.2	70	130	0.574	20	
1,1-Dichloroethene	16	1.0	20.00	0	78.2	70	130	3.07	20	
Trichloroethene (TCE)	15	1.0	20.00	0	75.8	70	130	1.27	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		113	70	130	0	0	
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130	0	0	
Surr: Dibromofluoromethane	12		10.00		117	70	130	0	0	
Surr: Toluene-d8	11		10.00		110	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A75890** RunNo: **75890**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685234** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A75890**	RunNo: **75890**
Prep Date:	Analysis Date: **3/11/2021**	SeqNo: **2685234** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A75890**	RunNo: **75890**
Prep Date:	Analysis Date: **3/11/2021**	SeqNo: **2685234** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	11		10.00		113	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58560**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**							
Client ID: **PBW**	Batch ID: **58560**	RunNo: **75812**							
Prep Date: **3/8/2021**	Analysis Date: **3/9/2021**	SeqNo: **2682354**	Units: **µg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Azobenzene	ND	5.0								
Benzoic acid	ND	5.0								
Benzyl alcohol	ND	5.0								
Bis(2-chloroethoxy)methane	ND	5.0								
Bis(2-chloroethyl)ether	ND	5.0								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	4.8	10								J
4-Bromophenyl phenyl ether	ND	5.0								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
2-Chloronaphthalene	ND	5.0								
2-Chlorophenol	ND	5.0								
4-Chlorophenyl phenyl ether	ND	5.0								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenzofuran	ND	5.0								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
3,3´-Dichlorobenzidine	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	5.0								
4,6-Dinitro-2-methylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	5.0								
Hexachlorobenzene	ND	5.0								
Hexachlorobutadiene	ND	5.0								
Hexachlorocyclopentadiene	ND	5.0								
Hexachloroethane	ND	5.0								
Isophorone	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
N-Nitrosodi-n-propylamine	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58560**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **58560**	RunNo: **75812**
Prep Date: **3/8/2021**	Analysis Date: **3/9/2021**	SeqNo: **2682354** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	5.0								
2-Nitroaniline	ND	5.0								
3-Nitroaniline	ND	5.0								
4-Nitroaniline	ND	5.0								
Nitrobenzene	ND	5.0								
2-Nitrophenol	ND	5.0								
4-Nitrophenol	ND	5.0								
Pentachlorophenol	ND	5.0								
Phenol	ND	5.0								
Pyridine	ND	5.0								
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	64		200.0		32.1	15	88.8			
Surr: Phenol-d5	51		200.0		25.3	15	71.9			
Surr: 2,4,6-Tribromophenol	97		200.0		48.6	15	97.4			
Surr: Nitrobenzene-d5	44		100.0		43.8	15	117			
Surr: 2-Fluorobiphenyl	42		100.0		41.7	15	100			
Surr: 4-Terphenyl-d14	97		100.0		97.3	15	120			

Sample ID: **lcs-58560**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **58560**	RunNo: **75812**
Prep Date: **3/8/2021**	Analysis Date: **3/9/2021**	SeqNo: **2682355** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	85	5.0	200.0	0	42.7	27.5	113			
2-Chlorophenol	87	5.0	200.0	0	43.6	17.9	103			
1,4-Dichlorobenzene	36	5.0	100.0	0	35.7	15	79.9			
2,4-Dinitrotoluene	39	5.0	100.0	0	38.6	22.9	97.2			
N-Nitrosodi-n-propylamine	40	5.0	100.0	0	40.4	34.1	104			
4-Nitrophenol	64	5.0	200.0	0	31.9	20	78.8			
Pentachlorophenol	83	5.0	200.0	0	41.7	26.8	97.6			
Phenol	59	5.0	200.0	0	29.7	15	66.2			
1,2,4-Trichlorobenzene	36	5.0	100.0	0	36.5	15	88.2			
Surr: 2-Fluorophenol	50		200.0		25.0	15	88.8			
Surr: Phenol-d5	42		200.0		20.9	15	71.9			
Surr: 2,4,6-Tribromophenol	69		200.0		34.7	15	97.4			
Surr: Nitrobenzene-d5	36		100.0		36.0	15	117			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **lcs-58560** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **58560** RunNo: **75812**
Prep Date: **3/8/2021** Analysis Date: **3/9/2021** SeqNo: **2682355** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	32		100.0		32.1	15	100			
Surr: 4-Terphenyl-d14	57		100.0		57.3	15	120			

Sample ID: **lcsd-58560** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **58560** RunNo: **75812**
Prep Date: **3/8/2021** Analysis Date: **3/9/2021** SeqNo: **2682356** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	87	5.0	200.0	0	43.6	27.5	113	2.14	45.2	
2-Chlorophenol	96	5.0	200.0	0	47.9	17.9	103	9.60	51.8	
1,4-Dichlorobenzene	41	5.0	100.0	0	41.2	15	79.9	14.3	59.6	
2,4-Dinitrotoluene	44	5.0	100.0	0	43.7	22.9	97.2	12.3	46.5	
N-Nitrosodi-n-propylamine	44	5.0	100.0	0	43.7	34.1	104	7.80	47.7	
4-Nitrophenol	78	5.0	200.0	0	38.9	20	78.8	19.9	42.6	
Pentachlorophenol	99	5.0	200.0	0	49.5	26.8	97.6	17.0	48.7	
Phenol	65	5.0	200.0	0	32.6	15	66.2	9.38	47.1	
1,2,4-Trichlorobenzene	39	5.0	100.0	0	38.9	15	88.2	6.25	52.5	
Surr: 2-Fluorophenol	0.85		200.0		0.427	15	88.8	0	0	S
Surr: Phenol-d5	1.0		200.0		0.525	15	71.9	0	0	S
Surr: 2,4,6-Tribromophenol	0		200.0		0	15	97.4	0	0	S
Surr: Nitrobenzene-d5	0		100.0		0	15	117	0	0	S
Surr: 2-Fluorobiphenyl	1.9		100.0		1.87	15	100	0	0	S
Surr: 4-Terphenyl-d14	0		100.0		0	15	120	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58576**	SampType: **MBLK**	TestCode: **EPA Method 8270SIM**							
Client ID: **PBW**	Batch ID: **58576**	RunNo: **75993**							
Prep Date: **3/8/2021**	Analysis Date: **3/16/2021**	SeqNo: **2689636**	Units: **µg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthylene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.10								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.10								
Benzo(g,h,i)perylene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	2.3		4.000		58.5	26.3	112			
Surr: 2-Fluorobiphenyl	2.5		4.000		63.5	21.1	110			
Surr: 4-Terphenyl-d14	5.8		4.000		145	17.6	167			

Sample ID: **lcs-58576**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **58576**	RunNo: **75993**							
Prep Date: **3/8/2021**	Analysis Date: **3/16/2021**	SeqNo: **2689637**	Units: **µg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.2	0.10	2.000	0	59.0	18.5	83.4			
1-Methylnaphthalene	1.2	0.10	2.000	0	59.0	15.1	89.6			
2-Methylnaphthalene	1.2	0.10	2.000	0	59.0	15	90.6			
Acenaphthylene	1.2	0.10	2.000	0	58.0	18.2	95.3			
Acenaphthene	1.2	0.10	2.000	0	58.0	23.9	90.3			
Fluorene	1.2	0.10	2.000	0	58.0	16.8	106			
Phenanthrene	1.2	0.10	2.000	0	60.0	23.3	105			
Anthracene	1.2	0.10	2.000	0	61.0	15	112			
Fluoranthene	1.4	0.20	2.000	0	71.0	15.4	138			
Pyrene	1.3	0.20	2.000	0	63.0	15	128			
Benz(a)anthracene	1.4	0.10	2.000	0	72.0	38.7	111			
Chrysene	1.4	0.10	2.000	0	70.0	32.6	96.6			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **lcs-58576** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **58576** RunNo: **75993**
Prep Date: **3/8/2021** Analysis Date: **3/16/2021** SeqNo: **2689637** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	1.4	0.10	2.000	0	69.0	23.8	113			
Benzo(k)fluoranthene	1.4	0.10	2.000	0	68.0	18.3	114			
Benzo(a)pyrene	1.3	0.070	2.000	0	66.0	24.5	123			
Dibenz(a,h)anthracene	1.4	0.10	2.000	0	69.0	17.8	118			
Benzo(g,h,i)perylene	1.4	0.10	2.000	0	68.0	22.2	110			
Indeno(1,2,3-cd)pyrene	1.4	0.30	2.000	0	72.0	20.8	115			
Surr: Nitrobenzene-d5	3.3		5.000		66.0	26.3	112			
Surr: 2-Fluorobiphenyl	3.2		5.000		64.0	21.1	110			
Surr: 4-Terphenyl-d14	6.0		5.000		119	17.6	167			

Sample ID: **lcsd-58576** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **58576** RunNo: **75993**
Prep Date: **3/8/2021** Analysis Date: **3/16/2021** SeqNo: **2689639** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.2	0.10	2.000	0	61.0	18.5	83.4	3.33	20	
1-Methylnaphthalene	1.2	0.10	2.000	0	61.0	15.1	89.6	3.33	20	
2-Methylnaphthalene	1.2	0.10	2.000	0	62.0	15	90.6	4.96	20	
Acenaphthylene	1.2	0.10	2.000	0	61.0	18.2	95.3	5.04	20	
Acenaphthene	1.2	0.10	2.000	0	62.0	23.9	90.3	6.67	20	
Fluorene	1.3	0.10	2.000	0	64.0	16.8	106	9.84	20	
Phenanthrene	1.3	0.10	2.000	0	67.0	23.3	105	11.0	20	
Anthracene	1.4	0.10	2.000	0	69.0	15	112	12.3	20	
Fluoranthene	1.6	0.20	2.000	0	81.0	15.4	138	13.2	20	
Pyrene	1.4	0.20	2.000	0	70.0	15	128	10.5	20	
Benz(a)anthracene	1.6	0.10	2.000	0	82.0	38.7	111	13.0	20	
Chrysene	1.6	0.10	2.000	0	78.0	32.6	96.6	10.8	20	
Benzo(b)fluoranthene	1.6	0.10	2.000	0	80.0	23.8	113	14.8	20	
Benzo(k)fluoranthene	1.6	0.10	2.000	0	79.0	18.3	114	15.0	20	
Benzo(a)pyrene	1.5	0.070	2.000	0	74.0	24.5	123	11.4	20	
Dibenz(a,h)anthracene	1.6	0.10	2.000	0	78.0	17.8	118	12.2	20	
Benzo(g,h,i)perylene	1.5	0.10	2.000	0	77.0	22.2	110	12.4	20	
Indeno(1,2,3-cd)pyrene	1.6	0.30	2.000	0	78.0	20.8	115	8.00	20	
Surr: Nitrobenzene-d5	3.7		5.000		73.6	26.3	112	0	0	
Surr: 2-Fluorobiphenyl	3.6		5.000		72.4	21.1	110	0	0	
Surr: 4-Terphenyl-d14	6.5		5.000		131	17.6	167	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **B75848** RunNo: **75848**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2683796** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.4	70	130			
Surr: BFB	10		10.00		100	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **B75848** RunNo: **75848**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2683815** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.023	0.050								J
Surr: BFB	10		10.00		101	70	130			

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **B75890** RunNo: **75890**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685236** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	97.1	70	130			
Surr: BFB	10		10.00		103	70	130			

Sample ID: **2103354-007a ms g** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB 3-5-21** Batch ID: **B75890** RunNo: **75890**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685245** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0.02320	92.6	70	130			
Surr: BFB	9.9		10.00		99.5	70	130			

Sample ID: **2103354-007a msd g** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB 3-5-21** Batch ID: **B75890** RunNo: **75890**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685246** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0.02320	89.4	70	130	3.35	20	
Surr: BFB	9.9		10.00		98.7	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **B75890** RunNo: **75890**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685255** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103354**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **B75890**	RunNo: **75890**
Prep Date:	Analysis Date: **3/11/2021**	SeqNo: **2685255** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.022	0.050								J
Surr: BFB	10		10.00		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2103354 | RcptNo: 1

Received By: **Cheyenne Cason** 3/5/2021 3:31:00 PM

Completed By: **Erin Melendrez** 3/5/2021 3:34:42 PM

Reviewed By: SCG 3/5/21

unpres 125's : SPA 3.5.21

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 21 (<2 or >12 unless noted)

Adjusted? NO

Checked by: ENM 3/5/21

(125mL unpres. - ENM 3/5/21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.1	Good	Yes			
2	5.3	Good	Yes			
3	7.5	Good	Yes			

Released to Imaging: 11/23/2022 10:33:25 AM

Received by OCD: 3/25/2022 3:35:30 PM

Chain of Custody Record

Client: Marathon Petroleum Company

Mailing Address: 92 Giant Crossing Rd.
Jamestown, NM 87347

Phone #: 808-640-1823

Email or Fax#: bmcloughlin@trihydro.com

QA/QC Package:
☑ Standard ☑ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

☑ Standard ☐ Rush

Project Name:
2021 GW Sampling - 1st Quarter

Project #:
697-080-001

Project Manager:
Brian McLoughlin

Sampler:

On Ice: ☑ Yes ☐ No

# of Coolers: 3

Cooler Temp (including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2103354	8260/BTEX/MTBE	TPH GRO	TPH DRO/MRO	SVOC includes 1,4 Dioxane on reques	1,4 Dioxane only - ENH 3/5/21	WQCC metals	C/A*	NO2/NO3 combined	Nitrite	8011 EDB	BOD	COD	Cyanide	TDS/TSS	Gen Chem	PFAS
3-5-21	9:00	water	MKTF-31	13		-001	X	X	X	X	X	X	X			X						
3-5-21	9:15	water	MKTF-40	13		-002	X	X	X	X	X	X	X			X						
3-5-21	9:40	water	MKTF-28	11		-003	X	X	X	X	X	X	X									
3-5-21	10:00	water	MKTF-27	13		-004	X	X	X	X	X	X	X			X						
3-5-21	10:20	water	MKTF-25	13		-005	X	X	X	X	X	X	X			X						
3-5-20		water	Dup 3-5-21	13		-006	X	X	X	X	X	X	X			X						
3-5-20	9:00	water	EB 3-5-21	11		-007	X	X	X	X	X	X	X									
3-5-20	9:15	water	FB 3-5-21	3		-008	X															
		water	Trip Blank			-009	X															
		water	ENH 3/5/21																			
		water																				
		water																				

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
3-5-21			Cen Courier		3/5/21	1531
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:
3.0+0.1 = 3.1
5.2+0.1 = 5.3
7.4+0.1 = 7.5

* Per sampling plan - ENH 3/5/21

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

April 08, 2021

Brian McLoughlin
Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX

RE: 2021 GW Sampling 1st Quarter OrderNo.: 2103470

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 10 sample(s) on 3/9/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Case Narrative

WO#: **2103470**
Date: **4/8/2021**

CLIENT: Marathon
Project: 2021 GW Sampling 1st Quarter

Analytical Notes Regarding EPA Method 8015D:
The samples listed below had a single contaminant peak that was identified in the QC and the samples listed below. The contaminant peak was manually removed from the summation of the diesel range organcis results. The concentration of the contaminant peak, in the samples, that was removed is listed next to the sample name: MKTF-29 (0.36mg/L), KA-3 (0.65mg/L), Dup 3-9-21 (1.4mg/L), LCS 58742 (0.07mg/L), LCSD 58742 (0.02mg/L). We are researching the source of the contamination to prevent this peak from appearing in the future.

Analytical Notes Regarding EPA Method 504.1:
Sample Dup 3-9-21 was preserved with HCL.

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 8:20:00 AM
Lab ID: 2103470-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	4900	23	100		µg/L	100	3/17/2021 2:50:55 PM	A76015
Toluene	20	2.0	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Ethylbenzene	180	2.1	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Methyl tert-butyl ether (MTBE)	110	3.9	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,2,4-Trimethylbenzene	ND	1.2	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,2-Dichloroethane (EDC)	5.6	2.2	10	J	µg/L	10	3/11/2021 6:26:44 PM	A75890
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Naphthalene	ND	2.8	20		µg/L	10	3/11/2021 6:26:44 PM	A75890
1-Methylnaphthalene	11	8.4	40	J	µg/L	10	3/11/2021 6:26:44 PM	A75890
2-Methylnaphthalene	ND	6.9	40		µg/L	10	3/11/2021 6:26:44 PM	A75890
Acetone	ND	23	100		µg/L	10	3/11/2021 6:26:44 PM	A75890
Bromobenzene	ND	2.8	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Bromodichloromethane	ND	2.0	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Bromoform	ND	3.1	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Bromomethane	ND	16	30		µg/L	10	3/11/2021 6:26:44 PM	A75890
2-Butanone	ND	11	100		µg/L	10	3/11/2021 6:26:44 PM	A75890
Carbon disulfide	ND	4.4	100		µg/L	10	3/11/2021 6:26:44 PM	A75890
Carbon Tetrachloride	ND	1.8	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Chlorobenzene	ND	1.4	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Chloroethane	ND	3.8	20		µg/L	10	3/11/2021 6:26:44 PM	A75890
Chloroform	ND	1.3	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Chloromethane	ND	4.0	30		µg/L	10	3/11/2021 6:26:44 PM	A75890
2-Chlorotoluene	ND	1.3	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
4-Chlorotoluene	ND	5.1	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
cis-1,2-DCE	ND	3.9	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	3/11/2021 6:26:44 PM	A75890
Dibromochloromethane	ND	2.8	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Dibromomethane	ND	3.1	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Dichlorodifluoromethane	ND	4.4	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,1-Dichloroethane	21	2.7	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,1-Dichloroethene	5.7	1.3	10	J	µg/L	10	3/11/2021 6:26:44 PM	A75890
1,2-Dichloropropane	ND	1.3	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,3-Dichloropropane	ND	1.8	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
2,2-Dichloropropane	ND	2.6	20		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,1-Dichloropropene	ND	1.8	10		µg/L	10	3/11/2021 6:26:44 PM	A75890

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 8:20:00 AM
Lab ID: 2103470-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	3.3	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
2-Hexanone	ND	18	100		µg/L	10	3/11/2021 6:26:44 PM	A75890
Isopropylbenzene	13	1.8	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
4-Isopropyltoluene	2.6	2.0	10	J	µg/L	10	3/11/2021 6:26:44 PM	A75890
4-Methyl-2-pentanone	ND	11	100		µg/L	10	3/11/2021 6:26:44 PM	A75890
Methylene Chloride	ND	4.0	30		µg/L	10	3/11/2021 6:26:44 PM	A75890
n-Butylbenzene	5.9	2.5	30	J	µg/L	10	3/11/2021 6:26:44 PM	A75890
n-Propylbenzene	23	1.8	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
sec-Butylbenzene	ND	6.1	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Styrene	ND	1.3	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
tert-Butylbenzene	ND	2.4	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	3/11/2021 6:26:44 PM	A75890
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
trans-1,2-DCE	ND	4.9	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,2,3-Trichlorobenzene	ND	1.3	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,1,2-Trichloroethane	ND	1.9	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Trichlorofluoromethane	ND	0.92	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	3/11/2021 6:26:44 PM	A75890
Vinyl chloride	31	2.0	10		µg/L	10	3/11/2021 6:26:44 PM	A75890
Xylenes, Total	ND	5.5	15		µg/L	10	3/11/2021 6:26:44 PM	A75890
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%Rec	10	3/11/2021 6:26:44 PM	A75890
Surr: 4-Bromofluorobenzene	111	0	70-130		%Rec	10	3/11/2021 6:26:44 PM	A75890
Surr: Dibromofluoromethane	110	0	70-130		%Rec	10	3/11/2021 6:26:44 PM	A75890
Surr: Toluene-d8	109	0	70-130		%Rec	10	3/11/2021 6:26:44 PM	A75890
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	15	0.080	0.50		mg/L	10	3/11/2021 6:26:44 PM	B75890
Surr: BFB	94.4	0	70-130		%Rec	10	3/11/2021 6:26:44 PM	B75890

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 8:20:00 AM
Lab ID: 2103470-001B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0063	0.0095		µg/L	1	3/16/2021 5:30:38 PM	58711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 8:20:00 AM
Lab ID: 2103470-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.48	0.075	0.085		mg/L	1	3/23/2021 12:18:08 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 12:18:08 PM	58742
Surr: DNOP	89.8	0	45.1-141		%Rec	1	3/23/2021 12:18:08 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 8:20:00 AM
Lab ID: 2103470-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.22	0.50		mg/L	5	3/9/2021 7:51:18 PM	R75825
Chloride	960	25	50	*	mg/L	100	3/10/2021 9:11:41 PM	R75861
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/9/2021 7:51:18 PM	R75825
Bromide	1.2	0.25	0.50		mg/L	5	3/9/2021 7:51:18 PM	R75825
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	3/9/2021 7:51:18 PM	R75825
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/9/2021 7:51:18 PM	R75825
Sulfate	15	1.2	2.5		mg/L	5	3/9/2021 7:51:18 PM	R75825

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 8:20:00 AM
Lab ID: 2103470-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 9:28:26 AM	A75995
Barium	0.64	0.0011	0.0020		mg/L	1	3/17/2021 9:28:26 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 9:28:26 AM	A75995
Boron	0.72	0.0067	0.040		mg/L	1	3/17/2021 9:28:26 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 9:28:26 AM	A75995
Calcium	190	0.57	5.0		mg/L	5	3/17/2021 9:30:01 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 9:28:26 AM	A75995
Cobalt	0.012	0.0024	0.0060		mg/L	1	3/17/2021 9:28:26 AM	A75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 9:28:26 AM	A75995
Iron	0.18	0.010	0.020		mg/L	1	3/17/2021 9:28:26 AM	A75995
Magnesium	36	0.067	1.0		mg/L	1	3/17/2021 9:28:26 AM	A75995
Manganese	3.4	0.0029	0.010	*	mg/L	5	3/17/2021 9:30:01 AM	A75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 9:28:26 AM	A75995
Nickel	0.033	0.0033	0.010		mg/L	1	3/17/2021 9:28:26 AM	A75995
Potassium	2.4	0.16	1.0		mg/L	1	3/17/2021 9:28:26 AM	A75995
Silver	0.0035	0.0013	0.0050	J	mg/L	1	3/17/2021 9:28:26 AM	A75995
Sodium	680	1.4	10		mg/L	10	3/17/2021 9:58:12 AM	A75995
Zinc	0.015	0.0060	0.010		mg/L	1	3/17/2021 9:28:26 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/11/2021 1:49:39 PM	B75881
Arsenic	0.0019	0.00021	0.0010		mg/L	1	3/11/2021 1:49:39 PM	B75881
Lead	0.0015	0.000034	0.00050		mg/L	1	3/11/2021 1:49:39 PM	B75881
Selenium	ND	0.00066	0.0010		mg/L	1	3/11/2021 1:49:39 PM	B75881
Thallium	ND	0.000035	0.00050		mg/L	1	3/11/2021 1:49:39 PM	B75881
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 2:33:55 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 8:20:00 AM
Lab ID: 2103470-001F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	4.6	0.074	0.20	*	mg/L	10	3/14/2021 9:40:05 AM	58668
Barium	0.67	0.0082	0.015		mg/L	5	3/14/2021 9:03:14 AM	58668
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 8:59:18 AM	58668
Boron	0.70	0.037	0.20		mg/L	5	3/14/2021 9:03:14 AM	58668
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 8:59:18 AM	58668
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 8:59:18 AM	58668
Cobalt	0.014	0.0024	0.0060		mg/L	1	3/14/2021 8:59:18 AM	58668
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 8:59:18 AM	58668
Iron	1.8	0.064	0.25	*	mg/L	5	3/14/2021 9:03:14 AM	58668
Manganese	3.4	0.0041	0.010	*	mg/L	5	3/14/2021 9:03:14 AM	58668
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 8:59:18 AM	58668
Nickel	0.034	0.0033	0.010		mg/L	1	3/14/2021 8:59:18 AM	58668
Silver	0.0042	0.0013	0.0050	J	mg/L	1	3/14/2021 8:59:18 AM	58668
Zinc	0.0075	0.0064	0.010	J	mg/L	1	3/14/2021 8:59:18 AM	58668
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/12/2021 2:01:41 PM	58668
Arsenic	0.0025	0.0013	0.0050	J	mg/L	5	3/12/2021 2:01:41 PM	58668
Lead	0.0051	0.00017	0.0025		mg/L	5	3/12/2021 2:01:41 PM	58668
Selenium	ND	0.0033	0.0050		mg/L	5	3/12/2021 2:01:41 PM	58668
Thallium	ND	0.0012	0.0012		mg/L	5	3/12/2021 2:01:41 PM	58668
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 5:45:26 PM	58745

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 8:20:00 AM
Lab ID: 2103470-001G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Azobenzene	ND	0.55	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Benzoic acid	ND	1.1	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Bis(2-ethylhexyl)phthalate	6.8	4.5	10	J	µg/L	1	3/17/2021 1:42:05 PM	58648
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Carbazole	4.1	0.56	5.0	J	µg/L	1	3/17/2021 1:42:05 PM	58648
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/17/2021 1:42:05 PM	58648
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/17/2021 1:42:05 PM	58648
Dibenzofuran	2.2	0.38	5.0	J	µg/L	1	3/17/2021 1:42:05 PM	58648
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2021 1:42:05 PM	58648
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2021 1:42:05 PM	58648
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Isophorone	ND	0.40	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 8:20:00 AM
Lab ID: 2103470-001G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Phenol	28	0.33	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Pyridine	ND	0.93	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2021 1:42:05 PM	58648
Surr: 2-Fluorophenol	53.9	0	15-88.8		%Rec	1	3/17/2021 1:42:05 PM	58648
Surr: Phenol-d5	41.1	0	15-71.9		%Rec	1	3/17/2021 1:42:05 PM	58648
Surr: 2,4,6-Tribromophenol	70.5	0	15-97.4		%Rec	1	3/17/2021 1:42:05 PM	58648
Surr: Nitrobenzene-d5	62.4	0	15-117		%Rec	1	3/17/2021 1:42:05 PM	58648
Surr: 2-Fluorobiphenyl	60.1	0	15-100		%Rec	1	3/17/2021 1:42:05 PM	58648
Surr: 4-Terphenyl-d14	87.0	0	15-120		%Rec	1	3/17/2021 1:42:05 PM	58648
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	1.4	0.034	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
1-Methylnaphthalene	6.1	0.024	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
2-Methylnaphthalene	0.12	0.034	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
Acenaphthene	0.54	0.031	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
Fluorene	ND	0.031	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
Phenanthrene	ND	0.057	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
Anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
Fluoranthene	ND	0.10	0.20		µg/L	1	3/19/2021 9:40:00 AM	58646
Pyrene	ND	0.16	0.20		µg/L	1	3/19/2021 9:40:00 AM	58646
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
Chrysene	ND	0.024	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/19/2021 9:40:00 AM	58646
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/19/2021 9:40:00 AM	58646
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/19/2021 9:40:00 AM	58646
Surr: Nitrobenzene-d5	21.5	0	26.3-112	S	%Rec	1	3/19/2021 9:40:00 AM	58646
Surr: 2-Fluorobiphenyl	65.5	0	21.1-110		%Rec	1	3/19/2021 9:40:00 AM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 8:20:00 AM
Lab ID: 2103470-001G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	87.5	0	17.6-167		%Rec	1	3/19/2021 9:40:00 AM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:15:00 AM
Lab ID: 2103470-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	4.5	0.45	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Toluene	ND	0.40	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Ethylbenzene	0.82	0.43	2.0	J	µg/L	2	3/18/2021 12:10:33 PM	A76055
Methyl tert-butyl ether (MTBE)	240	0.79	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,2,4-Trimethylbenzene	ND	0.24	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,3,5-Trimethylbenzene	ND	0.36	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,2-Dichloroethane (EDC)	ND	0.44	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,2-Dibromoethane (EDB)	ND	0.61	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Naphthalene	ND	0.56	4.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1-Methylnaphthalene	ND	1.7	8.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
2-Methylnaphthalene	ND	1.4	8.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Acetone	6.6	4.7	20	J	µg/L	2	3/18/2021 12:10:33 PM	A76055
Bromobenzene	ND	0.57	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Bromodichloromethane	ND	0.41	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Bromoform	ND	0.63	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Bromomethane	ND	3.1	6.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
2-Butanone	ND	2.2	20		µg/L	2	3/18/2021 12:10:33 PM	A76055
Carbon disulfide	ND	0.89	20		µg/L	2	3/18/2021 12:10:33 PM	A76055
Carbon Tetrachloride	ND	0.35	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Chlorobenzene	ND	0.27	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Chloroethane	ND	0.75	4.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Chloroform	ND	0.27	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Chloromethane	ND	0.80	6.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
2-Chlorotoluene	ND	0.26	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
4-Chlorotoluene	ND	1.0	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
cis-1,2-DCE	ND	0.78	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
cis-1,3-Dichloropropene	ND	0.72	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,2-Dibromo-3-chloropropane	ND	1.2	4.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Dibromochloromethane	ND	0.57	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Dibromomethane	ND	0.62	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,2-Dichlorobenzene	ND	0.31	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,3-Dichlorobenzene	ND	0.32	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,4-Dichlorobenzene	ND	0.42	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Dichlorodifluoromethane	ND	0.88	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,1-Dichloroethane	1.1	0.55	2.0	J	µg/L	2	3/18/2021 12:10:33 PM	A76055
1,1-Dichloroethene	ND	0.26	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,2-Dichloropropane	ND	0.27	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,3-Dichloropropane	ND	0.36	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
2,2-Dichloropropane	ND	0.52	4.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,1-Dichloropropene	ND	0.36	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:15:00 AM
Lab ID: 2103470-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.66	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
2-Hexanone	ND	3.6	20		µg/L	2	3/18/2021 12:10:33 PM	A76055
Isopropylbenzene	ND	0.37	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
4-Isopropyltoluene	ND	0.40	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
4-Methyl-2-pentanone	ND	2.3	20		µg/L	2	3/18/2021 12:10:33 PM	A76055
Methylene Chloride	ND	0.80	6.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
n-Butylbenzene	ND	0.51	6.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
n-Propylbenzene	ND	0.36	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
sec-Butylbenzene	ND	1.2	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Styrene	ND	0.26	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
tert-Butylbenzene	ND	0.49	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,1,1,2-Tetrachloroethane	ND	0.53	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,1,2,2-Tetrachloroethane	ND	0.55	4.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Tetrachloroethene (PCE)	ND	0.71	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
trans-1,2-DCE	ND	0.97	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
trans-1,3-Dichloropropene	ND	0.68	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,2,3-Trichlorobenzene	ND	0.27	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,2,4-Trichlorobenzene	ND	0.48	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,1,1-Trichloroethane	ND	0.60	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,1,2-Trichloroethane	ND	0.38	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Trichloroethene (TCE)	ND	0.41	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Trichlorofluoromethane	ND	0.18	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
1,2,3-Trichloropropane	ND	0.88	4.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Vinyl chloride	ND	0.39	2.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Xylenes, Total	ND	1.1	3.0		µg/L	2	3/18/2021 12:10:33 PM	A76055
Surr: 1,2-Dichloroethane-d4	86.3	0	70-130		%Rec	2	3/18/2021 12:10:33 PM	A76055
Surr: 4-Bromofluorobenzene	85.2	0	70-130		%Rec	2	3/18/2021 12:10:33 PM	A76055
Surr: Dibromofluoromethane	96.3	0	70-130		%Rec	2	3/18/2021 12:10:33 PM	A76055
Surr: Toluene-d8	84.2	0	70-130		%Rec	2	3/18/2021 12:10:33 PM	A76055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.13	0.016	0.10		mg/L	2	3/18/2021 12:10:33 PM	B76055
Surr: BFB	95.3	0	70-130		%Rec	2	3/18/2021 12:10:33 PM	B76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:15:00 AM
Lab ID: 2103470-002B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0062	0.0094		µg/L	1	3/16/2021 5:45:42 PM	58711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:15:00 AM
Lab ID: 2103470-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	6.1	0.075	0.085		mg/L	1	3/23/2021 12:41:54 PM	58742
Motor Oil Range Organics (MRO)	2.0	0.60	0.60		mg/L	1	3/23/2021 12:41:54 PM	58742
Surr: DNOP	91.9	0	45.1-141		%Rec	1	3/23/2021 12:41:54 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:15:00 AM
Lab ID: 2103470-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	1.7	0.22	0.50		mg/L	5	3/9/2021 8:16:32 PM	R75825
Chloride	1500	25	50	*	mg/L	100	3/10/2021 9:24:32 PM	R75861
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/9/2021 8:16:32 PM	R75825
Bromide	4.9	0.25	0.50		mg/L	5	3/9/2021 8:16:32 PM	R75825
Nitrogen, Nitrate (As N)	0.33	0.10	0.50	J	mg/L	5	3/9/2021 8:16:32 PM	R75825
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/9/2021 8:16:32 PM	R75825
Sulfate	22	1.2	2.5		mg/L	5	3/9/2021 8:16:32 PM	R75825

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:15:00 AM
Lab ID: 2103470-002E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 9:31:34 AM	A75995
Barium	0.81	0.0011	0.0020		mg/L	1	3/17/2021 9:31:34 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 9:31:34 AM	A75995
Boron	1.5	0.033	0.20		mg/L	5	3/17/2021 9:33:10 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 9:31:34 AM	A75995
Calcium	140	0.57	5.0		mg/L	5	3/17/2021 9:33:10 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 9:31:34 AM	A75995
Cobalt	0.0099	0.0024	0.0060		mg/L	1	3/17/2021 9:31:34 AM	A75995
Copper	0.064	0.0035	0.0060		mg/L	1	3/17/2021 9:31:34 AM	A75995
Iron	0.76	0.010	0.020	*	mg/L	1	3/17/2021 9:31:34 AM	A75995
Magnesium	27	0.067	1.0		mg/L	1	3/17/2021 9:31:34 AM	A75995
Manganese	0.98	0.00058	0.0020	*	mg/L	1	3/17/2021 9:31:34 AM	A75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 9:31:34 AM	A75995
Nickel	0.18	0.0033	0.010	*	mg/L	1	3/17/2021 9:31:34 AM	A75995
Potassium	3.7	0.16	1.0		mg/L	1	3/17/2021 9:31:34 AM	A75995
Silver	0.0021	0.0013	0.0050	J	mg/L	1	3/17/2021 9:31:34 AM	A75995
Sodium	1200	2.7	20		mg/L	20	3/17/2021 9:59:44 AM	A75995
Zinc	0.034	0.0060	0.010		mg/L	1	3/17/2021 9:31:34 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/11/2021 1:52:23 PM	B75881
Arsenic	0.0056	0.00021	0.0010		mg/L	1	3/11/2021 1:52:23 PM	B75881
Lead	0.0044	0.000034	0.00050		mg/L	1	3/11/2021 1:52:23 PM	B75881
Selenium	ND	0.00066	0.0010		mg/L	1	3/11/2021 1:52:23 PM	B75881
Thallium	0.000039	0.000035	0.00050	J	mg/L	1	3/11/2021 1:52:23 PM	B75881
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 2:36:18 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:15:00 AM
Lab ID: 2103470-002F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	4.0	0.037	0.10	*	mg/L	5	3/14/2021 9:09:24 AM	58668
Barium	0.85	0.0016	0.0030		mg/L	1	3/14/2021 9:08:04 AM	58668
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 9:08:04 AM	58668
Boron	1.6	0.037	0.20		mg/L	5	3/14/2021 9:09:24 AM	58668
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 9:08:04 AM	58668
Chromium	0.0038	0.0021	0.0060	J	mg/L	1	3/14/2021 9:08:04 AM	58668
Cobalt	0.013	0.0024	0.0060		mg/L	1	3/14/2021 9:08:04 AM	58668
Copper	0.014	0.0047	0.0060		mg/L	1	3/14/2021 9:08:04 AM	58668
Iron	3.6	0.064	0.25	*	mg/L	5	3/14/2021 9:09:24 AM	58668
Manganese	1.1	0.0041	0.010	*	mg/L	5	3/14/2021 9:09:24 AM	58668
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 9:08:04 AM	58668
Nickel	0.19	0.0033	0.010	*	mg/L	1	3/14/2021 9:08:04 AM	58668
Silver	0.0031	0.0013	0.0050	J	mg/L	1	3/14/2021 9:08:04 AM	58668
Zinc	0.025	0.0064	0.010		mg/L	1	3/14/2021 9:08:04 AM	58668
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/12/2021 1:12:54 PM	58668
Arsenic	0.0072	0.0013	0.0050		mg/L	5	3/12/2021 1:12:54 PM	58668
Lead	0.0083	0.00017	0.0025		mg/L	5	3/12/2021 1:12:54 PM	58668
Selenium	ND	0.0033	0.0050		mg/L	5	3/12/2021 1:12:54 PM	58668
Thallium	ND	0.0012	0.0012		mg/L	5	3/12/2021 1:12:54 PM	58668
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 5:47:49 PM	58745

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:15:00 AM
Lab ID: 2103470-002H
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Azobenzene	ND	0.55	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Benzoic acid	ND	1.1	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Bis(2-ethylhexyl)phthalate	14	4.5	10		µg/L	1	3/17/2021 2:22:46 PM	58648
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Carbazole	ND	0.56	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Di-n-butyl phthalate	7.9	6.5	10	J	µg/L	1	3/17/2021 2:22:46 PM	58648
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/17/2021 2:22:46 PM	58648
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2021 2:22:46 PM	58648
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2021 2:22:46 PM	58648
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Isophorone	ND	0.40	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:15:00 AM
Lab ID: 2103470-002H
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Phenol	ND	0.33	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Pyridine	ND	0.93	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2021 2:22:46 PM	58648
Surr: 2-Fluorophenol	43.8	0	15-88.8		%Rec	1	3/17/2021 2:22:46 PM	58648
Surr: Phenol-d5	37.3	0	15-71.9		%Rec	1	3/17/2021 2:22:46 PM	58648
Surr: 2,4,6-Tribromophenol	59.0	0	15-97.4		%Rec	1	3/17/2021 2:22:46 PM	58648
Surr: Nitrobenzene-d5	53.2	0	15-117		%Rec	1	3/17/2021 2:22:46 PM	58648
Surr: 2-Fluorobiphenyl	56.4	0	15-100		%Rec	1	3/17/2021 2:22:46 PM	58648
Surr: 4-Terphenyl-d14	72.1	0	15-120		%Rec	1	3/17/2021 2:22:46 PM	58648
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	1.7	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
1-Methylnaphthalene	ND	1.2	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
2-Methylnaphthalene	ND	1.7	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Acenaphthylene	ND	2.2	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Acenaphthene	ND	1.5	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Fluorene	ND	1.5	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Phenanthrene	ND	2.8	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Anthracene	ND	1.7	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Fluoranthene	ND	5.0	10	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Pyrene	ND	8.0	10	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Benz(a)anthracene	ND	1.8	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Chrysene	ND	1.2	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Benzo(b)fluoranthene	ND	2.8	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Benzo(k)fluoranthene	ND	1.8	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Benzo(a)pyrene	ND	1.7	3.5	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Dibenz(a,h)anthracene	ND	1.7	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Benzo(g,h,i)perylene	ND	1.7	5.0	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Indeno(1,2,3-cd)pyrene	ND	2.2	15	D	µg/L	50	3/19/2021 10:24:00 AM	58646
Surr: Nitrobenzene-d5	0	0	26.3-112	SD	%Rec	50	3/19/2021 10:24:00 AM	58646
Surr: 2-Fluorobiphenyl	0	0	21.1-110	SD	%Rec	50	3/19/2021 10:24:00 AM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OAPIS-1
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:15:00 AM
Lab ID: 2103470-002H
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	0	0	17.6-167	SD	%Rec	50	3/19/2021 10:24:00 AM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Toluene	ND	0.20	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Methyl tert-butyl ether (MTBE)	23	0.39	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Naphthalene	ND	0.28	2.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Acetone	2.6	2.3	10	J	µg/L	1	3/11/2021 7:22:04 PM	A75890
Bromobenzene	ND	0.28	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Bromoform	ND	0.31	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Bromomethane	ND	1.6	3.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
2-Butanone	ND	1.1	10		µg/L	1	3/11/2021 7:22:04 PM	A75890
Carbon disulfide	ND	0.44	10		µg/L	1	3/11/2021 7:22:04 PM	A75890
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Chloroethane	ND	0.38	2.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Chloromethane	ND	0.40	3.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Dibromomethane	ND	0.31	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,1-Dichloroethane	0.47	0.27	1.0	J	µg/L	1	3/11/2021 7:22:04 PM	A75890
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
2-Hexanone	ND	1.8	10		µg/L	1	3/11/2021 7:22:04 PM	A75890
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/11/2021 7:22:04 PM	A75890
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Styrene	ND	0.13	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/11/2021 7:22:04 PM	A75890
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/11/2021 7:22:04 PM	A75890
Surr: 1,2-Dichloroethane-d4	115	0	70-130		%Rec	1	3/11/2021 7:22:04 PM	A75890
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	3/11/2021 7:22:04 PM	A75890
Surr: Dibromofluoromethane	119	0	70-130		%Rec	1	3/11/2021 7:22:04 PM	A75890
Surr: Toluene-d8	111	0	70-130		%Rec	1	3/11/2021 7:22:04 PM	A75890
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.024	0.0080	0.050	J	mg/L	1	3/11/2021 7:22:04 PM	B75890
Surr: BFB	98.4	0	70-130		%Rec	1	3/11/2021 7:22:04 PM	B75890

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-003B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.94	0.075	0.085		mg/L	1	3/23/2021 1:30:23 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 1:30:23 PM	58742
Surr: DNOP	93.6	0	45.1-141		%Rec	1	3/23/2021 1:30:23 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.22	0.50		mg/L	5	3/9/2021 8:42:18 PM	R75825
Chloride	1700	50	100	*	mg/L	200	3/10/2021 9:37:24 PM	R75861
Nitrogen, Nitrite (As N)	ND	0.28	2.0		mg/L	20	3/9/2021 8:55:10 PM	R75825
Bromide	3.3	0.25	0.50		mg/L	5	3/9/2021 8:42:18 PM	R75825
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	3/9/2021 8:42:18 PM	R75825
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/9/2021 8:42:18 PM	R75825
Sulfate	110	1.2	2.5		mg/L	5	3/9/2021 8:42:18 PM	R75825

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 9:34:44 AM	A75995
Barium	0.14	0.0011	0.0020		mg/L	1	3/17/2021 9:34:44 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 9:34:44 AM	A75995
Boron	0.58	0.0067	0.040		mg/L	1	3/17/2021 9:34:44 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 9:34:44 AM	A75995
Calcium	430	0.57	5.0		mg/L	5	3/17/2021 9:36:16 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 9:34:44 AM	A75995
Cobalt	0.0056	0.0024	0.0060	J	mg/L	1	3/17/2021 9:34:44 AM	A75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 9:34:44 AM	A75995
Iron	ND	0.010	0.020		mg/L	1	3/17/2021 9:34:44 AM	A75995
Magnesium	62	0.067	1.0		mg/L	1	3/17/2021 9:34:44 AM	A75995
Manganese	4.6	0.0029	0.010	*	mg/L	5	3/17/2021 9:36:16 AM	A75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 9:34:44 AM	A75995
Nickel	0.015	0.0033	0.010		mg/L	1	3/17/2021 9:34:44 AM	A75995
Potassium	0.57	0.16	1.0	J	mg/L	1	3/17/2021 9:34:44 AM	A75995
Silver	0.0080	0.0013	0.0050		mg/L	1	3/17/2021 9:34:44 AM	A75995
Sodium	980	1.4	10		mg/L	10	3/17/2021 10:05:52 AM	A75995
Zinc	0.014	0.0060	0.010		mg/L	1	3/17/2021 9:34:44 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/11/2021 1:55:05 PM	B75881
Arsenic	0.0010	0.00021	0.0010	J	mg/L	1	3/11/2021 1:55:05 PM	B75881
Lead	0.000067	0.000034	0.00050	J	mg/L	1	3/11/2021 1:55:05 PM	B75881
Selenium	ND	0.00066	0.0010		mg/L	1	3/11/2021 1:55:05 PM	B75881
Thallium	ND	0.000035	0.00050		mg/L	1	3/11/2021 1:55:05 PM	B75881
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 2:38:41 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.97	0.037	0.10	*	mg/L	5	3/14/2021 9:12:32 AM	58668
Barium	0.16	0.0016	0.0030		mg/L	1	3/14/2021 9:11:01 AM	58668
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 9:11:01 AM	58668
Boron	0.64	0.0074	0.040		mg/L	1	3/14/2021 9:11:01 AM	58668
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 9:11:01 AM	58668
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 9:11:01 AM	58668
Cobalt	0.0070	0.0024	0.0060		mg/L	1	3/14/2021 9:11:01 AM	58668
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 9:11:01 AM	58668
Iron	0.33	0.013	0.050	*	mg/L	1	3/14/2021 9:11:01 AM	58668
Manganese	4.7	0.0041	0.010	*	mg/L	5	3/14/2021 9:12:32 AM	58668
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 9:11:01 AM	58668
Nickel	0.015	0.0033	0.010		mg/L	1	3/14/2021 9:11:01 AM	58668
Silver	0.011	0.0013	0.0050		mg/L	1	3/14/2021 9:11:01 AM	58668
Zinc	ND	0.0064	0.010		mg/L	1	3/14/2021 9:11:01 AM	58668
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/12/2021 2:04:04 PM	58668
Arsenic	ND	0.0013	0.0050		mg/L	5	3/12/2021 2:04:04 PM	58668
Lead	0.00027	0.00017	0.0025	J	mg/L	5	3/12/2021 2:04:04 PM	58668
Selenium	ND	0.0033	0.0050		mg/L	5	3/12/2021 2:04:04 PM	58668
Thallium	ND	0.0012	0.0012		mg/L	5	3/12/2021 2:04:04 PM	58668
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 5:50:12 PM	58745

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Azobenzene	ND	0.55	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Benzoic acid	ND	1.1	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Bis(2-ethylhexyl)phthalate	7.5	4.5	10	J	µg/L	1	3/17/2021 3:03:48 PM	58648
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Carbazole	ND	0.56	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Di-n-butyl phthalate	7.2	6.5	10	J	µg/L	1	3/17/2021 3:03:48 PM	58648
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/17/2021 3:03:48 PM	58648
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2021 3:03:48 PM	58648
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2021 3:03:48 PM	58648
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Isophorone	ND	0.40	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Phenol	ND	0.33	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Pyridine	ND	0.93	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2021 3:03:48 PM	58648
Surr: 2-Fluorophenol	55.0	0	15-88.8		%Rec	1	3/17/2021 3:03:48 PM	58648
Surr: Phenol-d5	44.0	0	15-71.9		%Rec	1	3/17/2021 3:03:48 PM	58648
Surr: 2,4,6-Tribromophenol	85.4	0	15-97.4		%Rec	1	3/17/2021 3:03:48 PM	58648
Surr: Nitrobenzene-d5	68.0	0	15-117		%Rec	1	3/17/2021 3:03:48 PM	58648
Surr: 2-Fluorobiphenyl	67.3	0	15-100		%Rec	1	3/17/2021 3:03:48 PM	58648
Surr: 4-Terphenyl-d14	85.4	0	15-120		%Rec	1	3/17/2021 3:03:48 PM	58648
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
Acenaphthene	ND	0.031	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
Fluorene	ND	0.031	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
Phenanthrene	ND	0.057	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
Anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
Fluoranthene	ND	0.10	0.20		µg/L	1	3/19/2021 11:07:00 AM	58646
Pyrene	ND	0.16	0.20		µg/L	1	3/19/2021 11:07:00 AM	58646
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
Chrysene	ND	0.024	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/19/2021 11:07:00 AM	58646
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/19/2021 11:07:00 AM	58646
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/19/2021 11:07:00 AM	58646
Surr: Nitrobenzene-d5	52.5	0	26.3-112		%Rec	1	3/19/2021 11:07:00 AM	58646
Surr: 2-Fluorobiphenyl	45.0	0	21.1-110		%Rec	1	3/19/2021 11:07:00 AM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	68.5	0	17.6-167		%Rec	1	3/19/2021 11:07:00 AM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 11:20:00 AM
Lab ID: 2103470-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Toluene	ND	0.20	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Methyl tert-butyl ether (MTBE)	6.0	0.39	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,2-Dichloroethane (EDC)	1.4	0.22	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Naphthalene	ND	0.28	2.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Acetone	ND	2.3	10		µg/L	1	3/11/2021 7:49:40 PM	A75890
Bromobenzene	ND	0.28	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Bromoform	ND	0.31	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Bromomethane	ND	1.6	3.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
2-Butanone	ND	1.1	10		µg/L	1	3/11/2021 7:49:40 PM	A75890
Carbon disulfide	ND	0.44	10		µg/L	1	3/11/2021 7:49:40 PM	A75890
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Chloroethane	ND	0.38	2.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Chloroform	ND	0.13	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Chloromethane	ND	0.40	3.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
cis-1,2-DCE	2.5	0.39	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Dibromomethane	ND	0.31	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,1-Dichloroethane	29	0.27	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,1-Dichloroethene	2.5	0.13	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 11:20:00 AM
Lab ID: 2103470-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
2-Hexanone	ND	1.8	10		µg/L	1	3/11/2021 7:49:40 PM	A75890
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/11/2021 7:49:40 PM	A75890
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Styrene	ND	0.13	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Trichloroethene (TCE)	1.5	0.20	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/11/2021 7:49:40 PM	A75890
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/11/2021 7:49:40 PM	A75890
Surr: 1,2-Dichloroethane-d4	118	0	70-130		%Rec	1	3/11/2021 7:49:40 PM	A75890
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	3/11/2021 7:49:40 PM	A75890
Surr: Dibromofluoromethane	119	0	70-130		%Rec	1	3/11/2021 7:49:40 PM	A75890
Surr: Toluene-d8	111	0	70-130		%Rec	1	3/11/2021 7:49:40 PM	A75890
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.071	0.0080	0.050		mg/L	1	3/11/2021 7:49:40 PM	B75890
Surr: BFB	96.1	0	70-130		%Rec	1	3/11/2021 7:49:40 PM	B75890

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 11:20:00 AM
Lab ID: 2103470-004B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0063	0.0095		µg/L	1	3/16/2021 6:00:45 PM	58711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 11:20:00 AM
Lab ID: 2103470-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	ND	0.075	0.085		mg/L	1	3/23/2021 1:54:17 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 1:54:17 PM	58742
Surr: DNOP	82.8	0	45.1-141		%Rec	1	3/23/2021 1:54:17 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 11:20:00 AM
Lab ID: 2103470-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	1.0	0.22	0.50		mg/L	5	3/9/2021 9:08:03 PM	R75825
Chloride	570	12	25	*	mg/L	50	3/10/2021 9:50:17 PM	R75861
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/9/2021 9:08:03 PM	R75825
Bromide	1.3	0.25	0.50		mg/L	5	3/9/2021 9:08:03 PM	R75825
Nitrogen, Nitrate (As N)	0.23	0.10	0.50	J	mg/L	5	3/9/2021 9:08:03 PM	R75825
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/9/2021 9:08:03 PM	R75825
Sulfate	560	5.0	10	*	mg/L	20	3/9/2021 9:20:54 PM	R75825

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 11:20:00 AM
Lab ID: 2103470-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.025	0.0056	0.020		mg/L	1	3/17/2021 9:37:51 AM	A75995
Barium	0.032	0.0011	0.0020		mg/L	1	3/17/2021 9:37:51 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 9:37:51 AM	A75995
Boron	0.72	0.0067	0.040		mg/L	1	3/17/2021 9:37:51 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 9:37:51 AM	A75995
Calcium	86	0.11	1.0		mg/L	1	3/17/2021 9:37:51 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 9:37:51 AM	A75995
Cobalt	0.0029	0.0024	0.0060	J	mg/L	1	3/17/2021 9:37:51 AM	A75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 9:37:51 AM	A75995
Iron	0.012	0.010	0.020	J	mg/L	1	3/17/2021 9:37:51 AM	A75995
Magnesium	16	0.067	1.0		mg/L	1	3/17/2021 9:37:51 AM	A75995
Manganese	0.0050	0.00058	0.0020		mg/L	1	3/17/2021 9:37:51 AM	A75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 9:37:51 AM	A75995
Nickel	0.014	0.0033	0.010		mg/L	1	3/17/2021 9:37:51 AM	A75995
Potassium	0.43	0.16	1.0	J	mg/L	1	3/17/2021 9:37:51 AM	A75995
Silver	0.0016	0.0013	0.0050	J	mg/L	1	3/17/2021 9:37:51 AM	A75995
Sodium	780	1.4	10		mg/L	10	3/17/2021 10:07:27 AM	A75995
Zinc	0.012	0.0060	0.010		mg/L	1	3/17/2021 9:37:51 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/11/2021 1:57:49 PM	B75881
Arsenic	0.00058	0.00021	0.0010	J	mg/L	1	3/11/2021 1:57:49 PM	B75881
Lead	0.00010	0.000034	0.00050	J	mg/L	1	3/11/2021 1:57:49 PM	B75881
Selenium	ND	0.00066	0.0010		mg/L	1	3/11/2021 1:57:49 PM	B75881
Thallium	ND	0.000035	0.00050		mg/L	1	3/11/2021 1:57:49 PM	B75881
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 2:41:04 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 11:20:00 AM
Lab ID: 2103470-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	15	0.15	0.40	*	mg/L	20	3/14/2021 9:41:39 AM	58668
Barium	0.21	0.0016	0.0030		mg/L	1	3/14/2021 9:18:54 AM	58668
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 9:18:54 AM	58668
Boron	0.75	0.0074	0.040		mg/L	1	3/14/2021 9:18:54 AM	58668
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 9:18:54 AM	58668
Chromium	0.0061	0.0021	0.0060		mg/L	1	3/14/2021 9:18:54 AM	58668
Cobalt	0.0068	0.0024	0.0060		mg/L	1	3/14/2021 9:18:54 AM	58668
Copper	0.0070	0.0047	0.0060		mg/L	1	3/14/2021 9:18:54 AM	58668
Iron	5.6	0.26	1.0	*	mg/L	20	3/14/2021 9:41:39 AM	58668
Manganese	0.70	0.00081	0.0020	*	mg/L	1	3/14/2021 9:18:54 AM	58668
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 9:18:54 AM	58668
Nickel	0.023	0.0033	0.010		mg/L	1	3/14/2021 9:18:54 AM	58668
Silver	0.0016	0.0013	0.0050	J	mg/L	1	3/14/2021 9:18:54 AM	58668
Zinc	0.0077	0.0064	0.010	J	mg/L	1	3/14/2021 9:18:54 AM	58668
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/12/2021 2:06:28 PM	58668
Arsenic	0.0013	0.0013	0.0050	J	mg/L	5	3/12/2021 2:06:28 PM	58668
Lead	0.0048	0.00017	0.0025		mg/L	5	3/12/2021 2:06:28 PM	58668
Selenium	ND	0.0033	0.0050		mg/L	5	3/12/2021 2:06:28 PM	58668
Thallium	ND	0.0012	0.0012		mg/L	5	3/12/2021 2:06:28 PM	58668
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:02:09 PM	58745

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 11:20:00 AM
Lab ID: 2103470-004G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Azobenzene	ND	0.55	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Benzoic acid	ND	1.1	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Bis(2-ethylhexyl)phthalate	9.2	4.5	10	J	µg/L	1	3/17/2021 3:45:01 PM	58648
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Carbazole	ND	0.56	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Di-n-butyl phthalate	6.8	6.5	10	J	µg/L	1	3/17/2021 3:45:01 PM	58648
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/17/2021 3:45:01 PM	58648
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2021 3:45:01 PM	58648
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2021 3:45:01 PM	58648
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Isophorone	ND	0.40	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 11:20:00 AM
Lab ID: 2103470-004G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Phenol	ND	0.33	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Pyridine	ND	0.93	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2021 3:45:01 PM	58648
Surr: 2-Fluorophenol	56.8	0	15-88.8		%Rec	1	3/17/2021 3:45:01 PM	58648
Surr: Phenol-d5	45.5	0	15-71.9		%Rec	1	3/17/2021 3:45:01 PM	58648
Surr: 2,4,6-Tribromophenol	72.4	0	15-97.4		%Rec	1	3/17/2021 3:45:01 PM	58648
Surr: Nitrobenzene-d5	63.2	0	15-117		%Rec	1	3/17/2021 3:45:01 PM	58648
Surr: 2-Fluorobiphenyl	62.6	0	15-100		%Rec	1	3/17/2021 3:45:01 PM	58648
Surr: 4-Terphenyl-d14	86.1	0	15-120		%Rec	1	3/17/2021 3:45:01 PM	58648
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
Acenaphthene	ND	0.031	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
Fluorene	ND	0.031	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
Phenanthrene	ND	0.057	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
Anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
Fluoranthene	ND	0.10	0.20		µg/L	1	3/19/2021 11:51:00 AM	58646
Pyrene	ND	0.16	0.20		µg/L	1	3/19/2021 11:51:00 AM	58646
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
Chrysene	ND	0.024	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/19/2021 11:51:00 AM	58646
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/19/2021 11:51:00 AM	58646
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/19/2021 11:51:00 AM	58646
Surr: Nitrobenzene-d5	67.5	0	26.3-112		%Rec	1	3/19/2021 11:51:00 AM	58646
Surr: 2-Fluorobiphenyl	58.0	0	21.1-110		%Rec	1	3/19/2021 11:51:00 AM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 11:20:00 AM
Lab ID: 2103470-004G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	79.0	0	17.6-167		%Rec	1	3/19/2021 11:51:00 AM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:00:00 PM
Lab ID: 2103470-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: **BRM**	
Benzene	2.2	0.23	1.0		µg/L	1	3/17/2021 3:45:18 PM	C76015
Toluene	ND	0.20	1.0		µg/L	1	3/17/2021 3:45:18 PM	C76015
Ethylbenzene	2.5	0.21	1.0		µg/L	1	3/17/2021 3:45:18 PM	C76015
Methyl tert-butyl ether (MTBE)	52	0.39	1.0		µg/L	1	3/17/2021 3:45:18 PM	C76015
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/17/2021 3:45:18 PM	C76015
Surr: 1,2-Dichloroethane-d4	89.7	0	70-130		%Rec	1	3/17/2021 3:45:18 PM	C76015
Surr: 4-Bromofluorobenzene	85.8	0	70-130		%Rec	1	3/17/2021 3:45:18 PM	C76015
Surr: Dibromofluoromethane	91.0	0	70-130		%Rec	1	3/17/2021 3:45:18 PM	C76015
Surr: Toluene-d8	83.0	0	70-130		%Rec	1	3/17/2021 3:45:18 PM	C76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.11	0.0080	0.050		mg/L	1	3/17/2021 3:45:18 PM	B76015
Surr: BFB	96.8	0	70-130		%Rec	1	3/17/2021 3:45:18 PM	B76015

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:00:00 PM
Lab ID: 2103470-005B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.33	0.075	0.085		mg/L	1	3/23/2021 2:23:22 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 2:23:22 PM	58742
Surr: DNOP	88.2	0	45.1-141		%Rec	1	3/23/2021 2:23:22 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:00:00 PM
Lab ID: 2103470-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.51	0.043	0.10		mg/L	1	3/10/2021 11:19:25 AM	R75861
Chloride	310	5.0	10	*	mg/L	20	3/10/2021 11:32:18 AM	R75861
Nitrogen, Nitrite (As N)	ND	0.014	0.10		mg/L	1	3/10/2021 11:19:25 AM	R75861
Bromide	2.1	0.050	0.10		mg/L	1	3/10/2021 11:19:25 AM	R75861
Nitrogen, Nitrate (As N)	0.43	0.020	0.10		mg/L	1	3/10/2021 11:19:25 AM	R75861
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	3/10/2021 11:19:25 AM	R75861
Sulfate	49	5.0	10		mg/L	20	3/10/2021 11:32:18 AM	R75861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:00:00 PM
Lab ID: 2103470-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.022	0.0056	0.020		mg/L	1	3/17/2021 9:45:38 AM	A75995
Barium	0.16	0.0011	0.0020		mg/L	1	3/17/2021 9:45:38 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 9:45:38 AM	A75995
Boron	1.3	0.033	0.20		mg/L	5	3/17/2021 9:47:12 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 9:45:38 AM	A75995
Calcium	26	0.11	1.0		mg/L	1	3/17/2021 9:45:38 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 9:45:38 AM	A75995
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2021 9:45:38 AM	A75995
Copper	0.0055	0.0035	0.0060	J	mg/L	1	3/17/2021 9:45:38 AM	A75995
Iron	0.034	0.010	0.020		mg/L	1	3/17/2021 9:45:38 AM	A75995
Magnesium	4.6	0.067	1.0		mg/L	1	3/17/2021 9:45:38 AM	A75995
Manganese	0.31	0.00058	0.0020	*	mg/L	1	3/17/2021 9:45:38 AM	A75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 9:45:38 AM	A75995
Nickel	0.022	0.0033	0.010		mg/L	1	3/17/2021 9:45:38 AM	A75995
Potassium	2.0	0.16	1.0		mg/L	1	3/17/2021 9:45:38 AM	A75995
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2021 9:45:38 AM	A75995
Sodium	550	1.4	10		mg/L	10	3/17/2021 10:09:02 AM	A75995
Zinc	0.020	0.0060	0.010		mg/L	1	3/17/2021 9:45:38 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/11/2021 2:00:31 PM	B75881
Arsenic	0.00094	0.00021	0.0010	J	mg/L	1	3/11/2021 2:00:31 PM	B75881
Lead	0.00030	0.000034	0.00050	J	mg/L	1	3/11/2021 2:00:31 PM	B75881
Selenium	ND	0.00066	0.0010		mg/L	1	3/11/2021 2:00:31 PM	B75881
Thallium	ND	0.000035	0.00050		mg/L	1	3/11/2021 2:00:31 PM	B75881
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 2:48:14 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:00:00 PM
Lab ID: 2103470-005E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.049	0.0074	0.020		mg/L	1	3/14/2021 9:21:48 AM	58668
Barium	0.16	0.0016	0.0030		mg/L	1	3/14/2021 9:21:48 AM	58668
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 9:21:48 AM	58668
Boron	1.4	0.037	0.20		mg/L	5	3/14/2021 9:23:21 AM	58668
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 9:21:48 AM	58668
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 9:21:48 AM	58668
Cobalt	ND	0.0024	0.0060		mg/L	1	3/14/2021 9:21:48 AM	58668
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 9:21:48 AM	58668
Iron	0.044	0.013	0.050	J	mg/L	1	3/14/2021 9:21:48 AM	58668
Manganese	0.31	0.00081	0.0020	*	mg/L	1	3/14/2021 9:21:48 AM	58668
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 9:21:48 AM	58668
Nickel	0.022	0.0033	0.010		mg/L	1	3/14/2021 9:21:48 AM	58668
Silver	ND	0.0013	0.0050		mg/L	1	3/14/2021 9:21:48 AM	58668
Zinc	ND	0.0064	0.010		mg/L	1	3/14/2021 9:21:48 AM	58668
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/12/2021 2:08:52 PM	58668
Arsenic	ND	0.0013	0.0050		mg/L	5	3/12/2021 2:08:52 PM	58668
Lead	0.00044	0.00017	0.0025	J	mg/L	5	3/12/2021 2:08:52 PM	58668
Selenium	ND	0.0033	0.0050		mg/L	5	3/12/2021 2:08:52 PM	58668
Thallium	ND	0.0012	0.0012		mg/L	5	3/12/2021 2:08:52 PM	58668
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:04:32 PM	58745

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:00:00 PM
Lab ID: 2103470-005F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Azobenzene	ND	0.55	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Benzoic acid	ND	1.1	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Bis(2-ethylhexyl)phthalate	7.4	4.5	10	J	µg/L	1	3/17/2021 4:26:41 PM	58648
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Carbazole	ND	0.56	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/17/2021 4:26:41 PM	58648
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/17/2021 4:26:41 PM	58648
Dibenzofuran	2.1	0.38	5.0	J	µg/L	1	3/17/2021 4:26:41 PM	58648
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2021 4:26:41 PM	58648
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2021 4:26:41 PM	58648
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Isophorone	ND	0.40	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:00:00 PM
Lab ID: 2103470-005F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Phenol	ND	0.33	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Pyridine	ND	0.93	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2021 4:26:41 PM	58648
Surr: 2-Fluorophenol	45.6	0	15-88.8		%Rec	1	3/17/2021 4:26:41 PM	58648
Surr: Phenol-d5	39.0	0	15-71.9		%Rec	1	3/17/2021 4:26:41 PM	58648
Surr: 2,4,6-Tribromophenol	75.6	0	15-97.4		%Rec	1	3/17/2021 4:26:41 PM	58648
Surr: Nitrobenzene-d5	53.6	0	15-117		%Rec	1	3/17/2021 4:26:41 PM	58648
Surr: 2-Fluorobiphenyl	56.3	0	15-100		%Rec	1	3/17/2021 4:26:41 PM	58648
Surr: 4-Terphenyl-d14	81.6	0	15-120		%Rec	1	3/17/2021 4:26:41 PM	58648
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	0.12	0.034	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
1-Methylnaphthalene	0.10	0.024	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
Acenaphthene	0.14	0.031	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
Fluorene	ND	0.031	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
Phenanthrene	ND	0.057	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
Anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
Fluoranthene	ND	0.10	0.20		µg/L	1	3/19/2021 12:35:00 PM	58646
Pyrene	ND	0.16	0.20		µg/L	1	3/19/2021 12:35:00 PM	58646
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
Chrysene	ND	0.024	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/19/2021 12:35:00 PM	58646
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/19/2021 12:35:00 PM	58646
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/19/2021 12:35:00 PM	58646
Surr: Nitrobenzene-d5	81.5	0	26.3-112		%Rec	1	3/19/2021 12:35:00 PM	58646
Surr: 2-Fluorobiphenyl	67.0	0	21.1-110		%Rec	1	3/19/2021 12:35:00 PM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: KA-3
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:00:00 PM
Lab ID: 2103470-005F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	82.0	0	17.6-167		%Rec	1	3/19/2021 12:35:00 PM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:20:00 PM
Lab ID: 2103470-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: **BRM**	
Benzene	23	0.23	1.0		µg/L	1	3/17/2021 4:12:27 PM	C76015
Toluene	ND	0.20	1.0		µg/L	1	3/17/2021 4:12:27 PM	C76015
Ethylbenzene	4.8	0.21	1.0		µg/L	1	3/17/2021 4:12:27 PM	C76015
Methyl tert-butyl ether (MTBE)	51	0.39	1.0		µg/L	1	3/17/2021 4:12:27 PM	C76015
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/17/2021 4:12:27 PM	C76015
Surr: 1,2-Dichloroethane-d4	88.0	0	70-130		%Rec	1	3/17/2021 4:12:27 PM	C76015
Surr: 4-Bromofluorobenzene	88.0	0	70-130		%Rec	1	3/17/2021 4:12:27 PM	C76015
Surr: Dibromofluoromethane	95.7	0	70-130		%Rec	1	3/17/2021 4:12:27 PM	C76015
Surr: Toluene-d8	80.6	0	70-130		%Rec	1	3/17/2021 4:12:27 PM	C76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.23	0.0080	0.050		mg/L	1	3/17/2021 4:12:27 PM	B76015
Surr: BFB	94.1	0	70-130		%Rec	1	3/17/2021 4:12:27 PM	B76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:20:00 PM
Lab ID: 2103470-006B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0062	0.0094		µg/L	1	3/16/2021 6:15:51 PM	58711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:20:00 PM
Lab ID: 2103470-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.29	0.075	0.085		mg/L	1	3/23/2021 2:47:13 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 2:47:13 PM	58742
Surr: DNOP	80.0	0	45.1-141		%Rec	1	3/23/2021 2:47:13 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:20:00 PM
Lab ID: 2103470-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.60	0.043	0.10		mg/L	1	3/10/2021 11:45:11 AM	R75861
Chloride	270	5.0	10	*	mg/L	20	3/10/2021 11:58:04 AM	R75861
Nitrogen, Nitrite (As N)	ND	0.014	0.10		mg/L	1	3/10/2021 11:45:11 AM	R75861
Bromide	2.1	0.050	0.10		mg/L	1	3/10/2021 11:45:11 AM	R75861
Nitrogen, Nitrate (As N)	0.37	0.020	0.10		mg/L	1	3/10/2021 11:45:11 AM	R75861
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	3/10/2021 11:45:11 AM	R75861
Sulfate	5.6	0.25	0.50		mg/L	1	3/10/2021 11:45:11 AM	R75861

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Collection Date: 3/9/2021 12:20:00 PM
Lab ID: 2103470-006E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 9:48:46 AM	A75995
Barium	2.3	0.0056	0.010	*	mg/L	5	3/17/2021 9:50:21 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 9:48:46 AM	A75995
Boron	0.49	0.0067	0.040		mg/L	1	3/17/2021 9:48:46 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 9:48:46 AM	A75995
Calcium	110	0.57	5.0		mg/L	5	3/17/2021 9:50:21 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 9:48:46 AM	A75995
Cobalt	0.0032	0.0024	0.0060	J	mg/L	1	3/17/2021 9:48:46 AM	A75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 9:48:46 AM	A75995
Iron	0.15	0.010	0.020		mg/L	1	3/17/2021 9:48:46 AM	A75995
Magnesium	20	0.067	1.0		mg/L	1	3/17/2021 9:48:46 AM	A75995
Manganese	1.6	0.0029	0.010	*	mg/L	5	3/17/2021 9:50:21 AM	A75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 9:48:46 AM	A75995
Nickel	0.021	0.0033	0.010		mg/L	1	3/17/2021 9:48:46 AM	A75995
Potassium	0.37	0.16	1.0	J	mg/L	1	3/17/2021 9:48:46 AM	A75995
Silver	0.0019	0.0013	0.0050	J	mg/L	1	3/17/2021 9:48:46 AM	A75995
Sodium	380	0.69	5.0		mg/L	5	3/17/2021 9:50:21 AM	A75995
Zinc	ND	0.0060	0.010		mg/L	1	3/17/2021 9:48:46 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/11/2021 2:11:24 PM	B75881
Arsenic	0.0014	0.00021	0.0010		mg/L	1	3/11/2021 2:11:24 PM	B75881
Lead	0.000047	0.000034	0.00050	J	mg/L	1	3/11/2021 2:11:24 PM	B75881
Selenium	ND	0.00066	0.0010		mg/L	1	3/11/2021 2:11:24 PM	B75881
Thallium	ND	0.000035	0.00050		mg/L	1	3/11/2021 2:11:24 PM	B75881
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 2:50:38 PM	58800

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-3
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:20:00 PM
Lab ID: 2103470-006F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.039	0.0074	0.020		mg/L	1	3/14/2021 9:24:55 AM	58668
Barium	2.3	0.0082	0.015	*	mg/L	5	3/14/2021 9:26:31 AM	58668
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 9:24:55 AM	58668
Boron	0.52	0.0074	0.040		mg/L	1	3/14/2021 9:24:55 AM	58668
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 9:24:55 AM	58668
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 9:24:55 AM	58668
Cobalt	0.0050	0.0024	0.0060	J	mg/L	1	3/14/2021 9:24:55 AM	58668
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 9:24:55 AM	58668
Iron	0.64	0.013	0.050	*	mg/L	1	3/14/2021 9:24:55 AM	58668
Manganese	1.6	0.0041	0.010	*	mg/L	5	3/14/2021 9:26:31 AM	58668
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 9:24:55 AM	58668
Nickel	0.021	0.0033	0.010		mg/L	1	3/14/2021 9:24:55 AM	58668
Silver	0.0034	0.0013	0.0050	J	mg/L	1	3/14/2021 9:24:55 AM	58668
Zinc	ND	0.0064	0.010		mg/L	1	3/14/2021 9:24:55 AM	58668
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/12/2021 2:11:18 PM	58668
Arsenic	0.0024	0.0013	0.0050	J	mg/L	5	3/12/2021 2:11:18 PM	58668
Lead	0.00017	0.00017	0.0025	J	mg/L	5	3/12/2021 2:11:18 PM	58668
Selenium	ND	0.0033	0.0050		mg/L	5	3/12/2021 2:11:18 PM	58668
Thallium	ND	0.0012	0.0012		mg/L	5	3/12/2021 2:11:18 PM	58668
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:06:57 PM	58745

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Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:20:00 PM
Lab ID: 2103470-006G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Azobenzene	ND	0.55	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Benzoic acid	ND	1.1	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Bis(2-ethylhexyl)phthalate	7.6	4.5	10	J	µg/L	1	3/17/2021 5:07:59 PM	58648
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Carbazole	ND	0.56	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Di-n-butyl phthalate	6.6	6.5	10	J	µg/L	1	3/17/2021 5:07:59 PM	58648
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/17/2021 5:07:59 PM	58648
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2021 5:07:59 PM	58648
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2021 5:07:59 PM	58648
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Isophorone	ND	0.40	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648

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Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:20:00 PM
Lab ID: 2103470-006G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Phenol	4.4	0.33	5.0	J	µg/L	1	3/17/2021 5:07:59 PM	58648
Pyridine	ND	0.93	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2021 5:07:59 PM	58648
Surr: 2-Fluorophenol	48.8	0	15-88.8		%Rec	1	3/17/2021 5:07:59 PM	58648
Surr: Phenol-d5	40.5	0	15-71.9		%Rec	1	3/17/2021 5:07:59 PM	58648
Surr: 2,4,6-Tribromophenol	73.5	0	15-97.4		%Rec	1	3/17/2021 5:07:59 PM	58648
Surr: Nitrobenzene-d5	57.9	0	15-117		%Rec	1	3/17/2021 5:07:59 PM	58648
Surr: 2-Fluorobiphenyl	56.7	0	15-100		%Rec	1	3/17/2021 5:07:59 PM	58648
Surr: 4-Terphenyl-d14	86.5	0	15-120		%Rec	1	3/17/2021 5:07:59 PM	58648
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	0.60	0.034	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
1-Methylnaphthalene	1.3	0.024	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
2-Methylnaphthalene	0.34	0.034	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
Acenaphthene	0.36	0.031	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
Fluorene	0.28	0.031	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
Phenanthrene	ND	0.057	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
Anthracene	0.20	0.034	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
Fluoranthene	ND	0.10	0.20		µg/L	1	3/19/2021 1:20:00 PM	58646
Pyrene	ND	0.16	0.20		µg/L	1	3/19/2021 1:20:00 PM	58646
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
Chrysene	ND	0.024	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/19/2021 1:20:00 PM	58646
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/19/2021 1:20:00 PM	58646
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/19/2021 1:20:00 PM	58646
Surr: Nitrobenzene-d5	54.0	0	26.3-112		%Rec	1	3/19/2021 1:20:00 PM	58646
Surr: 2-Fluorobiphenyl	39.5	0	21.1-110		%Rec	1	3/19/2021 1:20:00 PM	58646

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Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 12:20:00 PM
Lab ID: 2103470-006G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	63.5	0	17.6-167		%Rec	1	3/19/2021 1:20:00 PM	58646

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Client Sample ID: FB 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 11:20:00 AM
Lab ID: 2103470-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Toluene	ND	0.20	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Naphthalene	ND	0.28	2.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Acetone	4.7	2.3	10	J	µg/L	1	3/17/2021 4:39:35 PM	A76015
Bromobenzene	ND	0.28	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Bromoform	ND	0.31	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Bromomethane	ND	1.6	3.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
2-Butanone	8.6	1.1	10	J	µg/L	1	3/17/2021 4:39:35 PM	A76015
Carbon disulfide	ND	0.44	10		µg/L	1	3/17/2021 4:39:35 PM	A76015
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Chloroethane	ND	0.38	2.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Chloroform	ND	0.13	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Chloromethane	ND	0.40	3.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Dibromomethane	ND	0.31	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 11:20:00 AM
Lab ID: 2103470-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
2-Hexanone	ND	1.8	10		µg/L	1	3/17/2021 4:39:35 PM	A76015
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/17/2021 4:39:35 PM	A76015
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Styrene	ND	0.13	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/17/2021 4:39:35 PM	A76015
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/17/2021 4:39:35 PM	A76015
Surr: 1,2-Dichloroethane-d4	86.7	0	70-130		%Rec	1	3/17/2021 4:39:35 PM	A76015
Surr: 4-Bromofluorobenzene	92.1	0	70-130		%Rec	1	3/17/2021 4:39:35 PM	A76015
Surr: Dibromofluoromethane	92.7	0	70-130		%Rec	1	3/17/2021 4:39:35 PM	A76015
Surr: Toluene-d8	84.0	0	70-130		%Rec	1	3/17/2021 4:39:35 PM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021
Lab ID: 2103470-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Toluene	ND	0.20	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Methyl tert-butyl ether (MTBE)	4.6	0.39	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,2-Dichloroethane (EDC)	1.2	0.22	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Naphthalene	ND	0.28	2.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Acetone	ND	2.3	10		µg/L	1	3/17/2021 5:06:43 PM	A76015
Bromobenzene	ND	0.28	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Bromoform	ND	0.31	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Bromomethane	ND	1.6	3.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
2-Butanone	ND	1.1	10		µg/L	1	3/17/2021 5:06:43 PM	A76015
Carbon disulfide	ND	0.44	10		µg/L	1	3/17/2021 5:06:43 PM	A76015
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Chloroethane	0.42	0.38	2.0	J	µg/L	1	3/17/2021 5:06:43 PM	A76015
Chloroform	ND	0.13	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Chloromethane	ND	0.40	3.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
cis-1,2-DCE	2.2	0.39	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Dibromomethane	ND	0.31	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,1-Dichloroethane	31	0.27	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,1-Dichloroethene	2.1	0.13	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021
Lab ID: 2103470-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
2-Hexanone	ND	1.8	10		µg/L	1	3/17/2021 5:06:43 PM	A76015
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/17/2021 5:06:43 PM	A76015
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Styrene	ND	0.13	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,1,2-Trichloroethane	0.19	0.19	1.0	J	µg/L	1	3/17/2021 5:06:43 PM	A76015
Trichloroethene (TCE)	1.3	0.20	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/17/2021 5:06:43 PM	A76015
Vinyl chloride	0.36	0.20	1.0	J	µg/L	1	3/17/2021 5:06:43 PM	A76015
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/17/2021 5:06:43 PM	A76015
Surr: 1,2-Dichloroethane-d4	87.7	0	70-130		%Rec	1	3/17/2021 5:06:43 PM	A76015
Surr: 4-Bromofluorobenzene	91.5	0	70-130		%Rec	1	3/17/2021 5:06:43 PM	A76015
Surr: Dibromofluoromethane	89.5	0	70-130		%Rec	1	3/17/2021 5:06:43 PM	A76015
Surr: Toluene-d8	84.1	0	70-130		%Rec	1	3/17/2021 5:06:43 PM	A76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.072	0.0080	0.050		mg/L	1	3/17/2021 5:06:43 PM	B76015
Surr: BFB	98.9	0	70-130		%Rec	1	3/17/2021 5:06:43 PM	B76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021
Lab ID: 2103470-008B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0062	0.0094		µg/L	1	3/16/2021 6:30:58 PM	58711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021
Lab ID: 2103470-008C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.094	0.075	0.085		mg/L	1	3/23/2021 3:11:54 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 3:11:54 PM	58742
Surr: DNOP	94.8	0	45.1-141		%Rec	1	3/23/2021 3:11:54 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021
Lab ID: 2103470-008D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.71	0.043	0.10		mg/L	1	3/10/2021 12:10:56 PM	R75861
Chloride	590	12	25	*	mg/L	50	3/10/2021 10:03:09 PM	R75861
Nitrogen, Nitrite (As N)	ND	0.28	2.0		mg/L	20	3/10/2021 12:23:48 PM	R75861
Bromide	1.2	0.050	0.10		mg/L	1	3/10/2021 12:10:56 PM	R75861
Nitrogen, Nitrate (As N)	ND	0.020	0.10		mg/L	1	3/10/2021 12:10:56 PM	R75861
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	3/10/2021 12:10:56 PM	R75861
Sulfate	560	5.0	10	*	mg/L	20	3/10/2021 12:23:48 PM	R75861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021
Lab ID: 2103470-008E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 9:51:56 AM	A75995
Barium	0.033	0.0011	0.0020		mg/L	1	3/17/2021 9:51:56 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 9:51:56 AM	A75995
Boron	0.75	0.0067	0.040		mg/L	1	3/17/2021 9:51:56 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 9:51:56 AM	A75995
Calcium	87	0.11	1.0		mg/L	1	3/17/2021 9:51:56 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 9:51:56 AM	A75995
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2021 9:51:56 AM	A75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 9:51:56 AM	A75995
Iron	ND	0.010	0.020		mg/L	1	3/17/2021 9:51:56 AM	A75995
Magnesium	17	0.067	1.0		mg/L	1	3/17/2021 9:51:56 AM	A75995
Manganese	0.0014	0.00058	0.0020	J	mg/L	1	3/17/2021 9:51:56 AM	A75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 9:51:56 AM	A75995
Nickel	0.016	0.0033	0.010		mg/L	1	3/17/2021 9:51:56 AM	A75995
Potassium	0.44	0.16	1.0	J	mg/L	1	3/17/2021 9:51:56 AM	A75995
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2021 9:51:56 AM	A75995
Sodium	800	1.4	10		mg/L	10	3/17/2021 10:10:34 AM	A75995
Zinc	0.011	0.0060	0.010		mg/L	1	3/17/2021 9:51:56 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/11/2021 2:14:06 PM	B75881
Arsenic	0.00050	0.00021	0.0010	J	mg/L	1	3/11/2021 2:14:06 PM	B75881
Lead	0.000071	0.000034	0.00050	J	mg/L	1	3/11/2021 2:14:06 PM	B75881
Selenium	ND	0.00066	0.0010		mg/L	1	3/11/2021 2:14:06 PM	B75881
Thallium	ND	0.000035	0.00050		mg/L	1	3/11/2021 2:14:06 PM	B75881
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 2:53:01 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021
Lab ID: 2103470-008F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	6.7	0.074	0.20	*	mg/L	10	3/14/2021 10:46:56 AM	58668
Barium	0.11	0.0016	0.0030		mg/L	1	3/14/2021 9:28:04 AM	58668
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 9:28:04 AM	58668
Boron	0.79	0.0074	0.040		mg/L	1	3/14/2021 9:28:04 AM	58668
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 9:28:04 AM	58668
Chromium	0.0026	0.0021	0.0060	J	mg/L	1	3/14/2021 9:28:04 AM	58668
Cobalt	0.0034	0.0024	0.0060	J	mg/L	1	3/14/2021 9:28:04 AM	58668
Copper	0.0064	0.0047	0.0060		mg/L	1	3/14/2021 9:28:04 AM	58668
Iron	2.5	0.064	0.25	*	mg/L	5	3/14/2021 9:29:23 AM	58668
Manganese	0.51	0.00081	0.0020	*	mg/L	1	3/14/2021 9:28:04 AM	58668
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 9:28:04 AM	58668
Nickel	0.019	0.0033	0.010		mg/L	1	3/14/2021 9:28:04 AM	58668
Silver	0.0025	0.0013	0.0050	J	mg/L	1	3/14/2021 9:28:04 AM	58668
Zinc	0.0076	0.0064	0.010	J	mg/L	1	3/14/2021 9:28:04 AM	58668
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/12/2021 2:13:43 PM	58668
Arsenic	ND	0.0013	0.0050		mg/L	5	3/12/2021 2:13:43 PM	58668
Lead	0.0023	0.00017	0.0025	J	mg/L	5	3/12/2021 2:13:43 PM	58668
Selenium	ND	0.0033	0.0050		mg/L	5	3/12/2021 2:13:43 PM	58668
Thallium	ND	0.0012	0.0012		mg/L	5	3/12/2021 2:13:43 PM	58668
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:09:22 PM	58745

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Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021
Lab ID: 2103470-008G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Azobenzene	ND	0.55	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Benzoic acid	ND	1.1	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Bis(2-ethylhexyl)phthalate	7.3	4.5	10	J	µg/L	1	3/17/2021 5:49:28 PM	58648
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Carbazole	ND	0.56	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Di-n-butyl phthalate	6.8	6.5	10	J	µg/L	1	3/17/2021 5:49:28 PM	58648
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/17/2021 5:49:28 PM	58648
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2021 5:49:28 PM	58648
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2021 5:49:28 PM	58648
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Isophorone	ND	0.40	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648

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Qualifiers:

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D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
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S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021
Lab ID: 2103470-008G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Phenol	ND	0.33	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Pyridine	ND	0.93	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2021 5:49:28 PM	58648
Surr: 2-Fluorophenol	40.6	0	15-88.8		%Rec	1	3/17/2021 5:49:28 PM	58648
Surr: Phenol-d5	35.1	0	15-71.9		%Rec	1	3/17/2021 5:49:28 PM	58648
Surr: 2,4,6-Tribromophenol	65.2	0	15-97.4		%Rec	1	3/17/2021 5:49:28 PM	58648
Surr: Nitrobenzene-d5	50.0	0	15-117		%Rec	1	3/17/2021 5:49:28 PM	58648
Surr: 2-Fluorobiphenyl	48.5	0	15-100		%Rec	1	3/17/2021 5:49:28 PM	58648
Surr: 4-Terphenyl-d14	84.9	0	15-120		%Rec	1	3/17/2021 5:49:28 PM	58648
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
Acenaphthene	ND	0.031	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
Fluorene	ND	0.031	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
Phenanthrene	ND	0.057	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
Anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
Fluoranthene	ND	0.10	0.20		µg/L	1	3/19/2021 2:05:00 PM	58646
Pyrene	ND	0.16	0.20		µg/L	1	3/19/2021 2:05:00 PM	58646
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
Chrysene	ND	0.024	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/19/2021 2:05:00 PM	58646
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/19/2021 2:05:00 PM	58646
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/19/2021 2:05:00 PM	58646
Surr: Nitrobenzene-d5	84.0	0	26.3-112		%Rec	1	3/19/2021 2:05:00 PM	58646
Surr: 2-Fluorobiphenyl	70.5	0	21.1-110		%Rec	1	3/19/2021 2:05:00 PM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021
Lab ID: 2103470-008G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	82.5	0	17.6-167		%Rec	1	3/19/2021 2:05:00 PM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Toluene	ND	0.20	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Naphthalene	ND	0.28	2.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Acetone	3.3	2.3	10	J	µg/L	1	3/17/2021 5:33:48 PM	A76015
Bromobenzene	ND	0.28	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Bromoform	ND	0.31	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Bromomethane	ND	1.6	3.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
2-Butanone	ND	1.1	10		µg/L	1	3/17/2021 5:33:48 PM	A76015
Carbon disulfide	ND	0.44	10		µg/L	1	3/17/2021 5:33:48 PM	A76015
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Chloroethane	ND	0.38	2.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Chloroform	ND	0.13	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Chloromethane	ND	0.40	3.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Dibromomethane	ND	0.31	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
2-Hexanone	ND	1.8	10		µg/L	1	3/17/2021 5:33:48 PM	A76015
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/17/2021 5:33:48 PM	A76015
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Styrene	ND	0.13	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/17/2021 5:33:48 PM	A76015
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/17/2021 5:33:48 PM	A76015
Surr: 1,2-Dichloroethane-d4	90.7	0	70-130		%Rec	1	3/17/2021 5:33:48 PM	A76015
Surr: 4-Bromofluorobenzene	88.7	0	70-130		%Rec	1	3/17/2021 5:33:48 PM	A76015
Surr: Dibromofluoromethane	94.1	0	70-130		%Rec	1	3/17/2021 5:33:48 PM	A76015
Surr: Toluene-d8	84.2	0	70-130		%Rec	1	3/17/2021 5:33:48 PM	A76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.020	0.0080	0.050	J	mg/L	1	3/17/2021 5:33:48 PM	B76015
Surr: BFB	96.6	0	70-130		%Rec	1	3/17/2021 5:33:48 PM	B76015

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-009B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	ND	0.075	0.085		mg/L	1	3/23/2021 3:35:36 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 3:35:36 PM	58742
Surr: DNOP	80.8	0	45.1-141		%Rec	1	3/23/2021 3:35:36 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-009C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.043	0.10		mg/L	1	3/10/2021 1:02:24 PM	R75861
Chloride	ND	0.25	0.50		mg/L	1	3/10/2021 1:02:24 PM	R75861
Nitrogen, Nitrite (As N)	ND	0.014	0.10		mg/L	1	3/10/2021 1:02:24 PM	R75861
Bromide	ND	0.050	0.10		mg/L	1	3/10/2021 1:02:24 PM	R75861
Nitrogen, Nitrate (As N)	ND	0.020	0.10		mg/L	1	3/10/2021 1:02:24 PM	R75861
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	3/10/2021 1:02:24 PM	R75861
Sulfate	ND	0.25	0.50		mg/L	1	3/10/2021 1:02:24 PM	R75861

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-009D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 9:55:04 AM	A75995
Barium	ND	0.0011	0.0020		mg/L	1	3/17/2021 9:55:04 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 9:55:04 AM	A75995
Boron	0.0069	0.0067	0.040	J	mg/L	1	3/17/2021 9:55:04 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 9:55:04 AM	A75995
Calcium	ND	0.11	1.0		mg/L	1	3/17/2021 9:55:04 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 9:55:04 AM	A75995
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2021 9:55:04 AM	A75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 9:55:04 AM	A75995
Iron	ND	0.010	0.020		mg/L	1	3/17/2021 9:55:04 AM	A75995
Magnesium	ND	0.067	1.0		mg/L	1	3/17/2021 9:55:04 AM	A75995
Manganese	ND	0.00058	0.0020		mg/L	1	3/17/2021 9:55:04 AM	A75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 9:55:04 AM	A75995
Nickel	ND	0.0033	0.010		mg/L	1	3/17/2021 9:55:04 AM	A75995
Potassium	ND	0.16	1.0		mg/L	1	3/17/2021 9:55:04 AM	A75995
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2021 9:55:04 AM	A75995
Sodium	0.33	0.14	1.0	J	mg/L	1	3/17/2021 9:55:04 AM	A75995
Zinc	0.015	0.0060	0.010		mg/L	1	3/17/2021 9:55:04 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/11/2021 2:16:49 PM	B75881
Arsenic	ND	0.00021	0.0010		mg/L	1	3/11/2021 2:16:49 PM	B75881
Lead	ND	0.000034	0.00050		mg/L	1	3/11/2021 2:16:49 PM	B75881
Selenium	ND	0.00066	0.0010		mg/L	1	3/11/2021 2:16:49 PM	B75881
Thallium	ND	0.000035	0.00050		mg/L	1	3/11/2021 2:16:49 PM	B75881
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 2:55:26 PM	58800

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-009E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	ND	0.0074	0.020		mg/L	1	3/14/2021 9:31:00 AM	58668
Barium	ND	0.0016	0.0030		mg/L	1	3/14/2021 9:31:00 AM	58668
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 9:31:00 AM	58668
Boron	ND	0.0074	0.040		mg/L	1	3/14/2021 9:31:00 AM	58668
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 9:31:00 AM	58668
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 9:31:00 AM	58668
Cobalt	ND	0.0024	0.0060		mg/L	1	3/14/2021 9:31:00 AM	58668
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 9:31:00 AM	58668
Iron	ND	0.013	0.050		mg/L	1	3/14/2021 9:31:00 AM	58668
Manganese	ND	0.00081	0.0020		mg/L	1	3/14/2021 9:31:00 AM	58668
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 9:31:00 AM	58668
Nickel	ND	0.0033	0.010		mg/L	1	3/14/2021 9:31:00 AM	58668
Silver	ND	0.0013	0.0050		mg/L	1	3/14/2021 9:31:00 AM	58668
Zinc	ND	0.0064	0.010		mg/L	1	3/14/2021 9:31:00 AM	58668
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/12/2021 1:37:42 PM	58668
Arsenic	ND	0.00026	0.0010		mg/L	1	3/12/2021 1:37:42 PM	58668
Lead	ND	0.000034	0.00050		mg/L	1	3/12/2021 1:37:42 PM	58668
Selenium	ND	0.00066	0.0010		mg/L	1	3/12/2021 1:37:42 PM	58668
Thallium	ND	0.00025	0.00025		mg/L	1	3/12/2021 1:37:42 PM	58668
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:11:48 PM	58745

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-009F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Azobenzene	ND	0.55	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Benzoic acid	ND	1.1	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Bis(2-ethylhexyl)phthalate	6.7	4.5	10	J	µg/L	1	3/17/2021 6:30:49 PM	58648
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Carbazole	ND	0.56	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/17/2021 6:30:49 PM	58648
Di-n-octyl phthalate	9.1	3.1	10	J	µg/L	1	3/17/2021 6:30:49 PM	58648
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2021 6:30:49 PM	58648
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2021 6:30:49 PM	58648
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Isophorone	ND	0.40	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-009F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Phenol	ND	0.33	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Pyridine	ND	0.93	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2021 6:30:49 PM	58648
Surr: 2-Fluorophenol	47.4	0	15-88.8		%Rec	1	3/17/2021 6:30:49 PM	58648
Surr: Phenol-d5	38.1	0	15-71.9		%Rec	1	3/17/2021 6:30:49 PM	58648
Surr: 2,4,6-Tribromophenol	59.7	0	15-97.4		%Rec	1	3/17/2021 6:30:49 PM	58648
Surr: Nitrobenzene-d5	56.8	0	15-117		%Rec	1	3/17/2021 6:30:49 PM	58648
Surr: 2-Fluorobiphenyl	55.8	0	15-100		%Rec	1	3/17/2021 6:30:49 PM	58648
Surr: 4-Terphenyl-d14	87.0	0	15-120		%Rec	1	3/17/2021 6:30:49 PM	58648
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
Acenaphthene	ND	0.031	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
Fluorene	ND	0.031	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
Phenanthrene	ND	0.057	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
Anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
Fluoranthene	ND	0.10	0.20		µg/L	1	3/19/2021 2:51:00 PM	58646
Pyrene	ND	0.16	0.20		µg/L	1	3/19/2021 2:51:00 PM	58646
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
Chrysene	ND	0.024	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/19/2021 2:51:00 PM	58646
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/19/2021 2:51:00 PM	58646
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/19/2021 2:51:00 PM	58646
Surr: Nitrobenzene-d5	53.5	0	26.3-112		%Rec	1	3/19/2021 2:51:00 PM	58646
Surr: 2-Fluorobiphenyl	47.0	0	21.1-110		%Rec	1	3/19/2021 2:51:00 PM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3/9/2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 9:45:00 AM
Lab ID: 2103470-009F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	61.5	0	17.6-167		%Rec	1	3/19/2021 2:51:00 PM	58646

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 1st Quarter
Collection Date:
Lab ID: 2103470-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Toluene	ND	0.20	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Naphthalene	ND	0.28	2.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Acetone	ND	2.3	10		µg/L	1	3/17/2021 7:49:23 PM	A76015
Bromobenzene	ND	0.28	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Bromoform	ND	0.31	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Bromomethane	ND	1.6	3.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
2-Butanone	ND	1.1	10		µg/L	1	3/17/2021 7:49:23 PM	A76015
Carbon disulfide	ND	0.44	10		µg/L	1	3/17/2021 7:49:23 PM	A76015
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Chloroethane	ND	0.38	2.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Chloroform	ND	0.13	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Chloromethane	ND	0.40	3.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Dibromomethane	ND	0.31	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 1st Quarter
Collection Date:
Lab ID: 2103470-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
2-Hexanone	ND	1.8	10		µg/L	1	3/17/2021 7:49:23 PM	A76015
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/17/2021 7:49:23 PM	A76015
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Styrene	ND	0.13	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/17/2021 7:49:23 PM	A76015
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/17/2021 7:49:23 PM	A76015
Surr: 1,2-Dichloroethane-d4	95.2	0	70-130		%Rec	1	3/17/2021 7:49:23 PM	A76015
Surr: 4-Bromofluorobenzene	91.5	0	70-130		%Rec	1	3/17/2021 7:49:23 PM	A76015
Surr: Dibromofluoromethane	96.1	0	70-130		%Rec	1	3/17/2021 7:49:23 PM	A76015
Surr: Toluene-d8	84.2	0	70-130		%Rec	1	3/17/2021 7:49:23 PM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103470**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 1st Quarter
Collection Date:
Lab ID: 2103470-010B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0064	0.0096		µg/L	1	3/16/2021 7:01:10 PM	58711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Pace Analytical®

ANALYTICAL REPORT

March 30, 2021

Revised Report

Hall Environmental Analysis Laboratory

Sample Delivery Group:	L1325480
Samples Received:	03/11/2021
Project Number:	
Description:	

Report To: Jackie Bolte
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

2103470-002G OAPIS-1 L1325480-01 WW

Collected by	Collected date/time	Received date/time
	03/09/21 09:15	03/11/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2011	WG1633983	1	03/12/21 20:01	03/14/21 04:29	SDL	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Report Revision History

Level II Report - Version 1: 03/22/21 17:10
Level IV Report - Version 2: 03/22/21 17:15

1-IN

SAMPLE RESULT SUMMARY
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.:
2103470-002G OAPIS-1

Lab Sample ID:	L1325480-01	**SDG:**	L1325480
Client Sample ID:	2103470-002G OAPIS-1	**Collected Date/Time:**	03/09/21 09:15
Lab File ID:	20210314042920	**Received Date/Time:**	03/11/21 09:00
Instrument ID:	LACHAT4	**Preparation Date/Time:**	03/12/21 20:01
Analytical Batch:	WG1633983	**Analysis Date/Time:**	03/14/21 04:29
Dilution Factor:	1	**Prep Method:**	9012B/4500 CN E2011/
Analytical Method:	4500CN E-2011	**Sample Vol Used:**	_____
Matrix:	WW	**Initial Wt/Vol:**	50 mL
Total Solids (%):	_____	**Final Wt/Vol:**	50 mL

Analyte	CAS	Result	Qualifier	MDL	RDL
		mg/l		*mg/l*	*mg/l*
Cyanide	57-12-5	0.0813		0.00180	0.00500

1-IN

SAMPLE RESULT SUMMARY
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.:
R3630469-1

Lab Sample ID:	R3630469-1	**SDG:**	L1325480
Client Sample ID:	BLANK	**Collected Date/Time:**	_____
Lab File ID:	20210314040347	**Received Date/Time:**	_____
Instrument ID:	LACHAT4	**Preparation Date/Time:**	03/12/21 20:01
Analytical Batch:	WG1633983	**Analysis Date/Time:**	03/14/21 04:03
Dilution Factor:	1	**Prep Method:**	9012B/4500 CN E2011/
Analytical Method:	4500CN E-2011	**Sample Vol Used:**	_____
Matrix:	WW	**Initial Wt/Vol:**	50 mL
Total Solids (%):	_____	**Final Wt/Vol:**	50 mL

Analyte	CAS	Result	Qualifier	MDL	RDL
		mg/l		*mg/l*	*mg/l*
Cyanide	57-12-5	U		0.00180	0.00500

1-IN

SAMPLE RESULT SUMMARY
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.:
R3630469-7

Lab Sample ID:	R3630469-7	**SDG:**	L1325480
Client Sample ID:	DUP	**Collected Date/Time:**	03/09/21 08:44
Lab File ID:	20210314042819	**Received Date/Time:**	03/11/21 09:00
Instrument ID:	LACHAT4	**Preparation Date/Time:**	03/12/21 20:01
Analytical Batch:	WG1633983	**Analysis Date/Time:**	03/14/21 04:28
Dilution Factor:	1	**Prep Method:**	9012B/4500 CN E2011/
Analytical Method:	4500CN E-2011	**Sample Vol Used:**	_____
Matrix:	WW	**Initial Wt/Vol:**	50 mL
Total Solids (%):	_____	**Final Wt/Vol:**	50 mL

Analyte	CAS	Result	Qualifier	MDL	RDL
		mg/l		*mg/l*	*mg/l*
Cyanide	57-12-5	ND	P1	0.00180	0.00500

1-IN

SAMPLE RESULT SUMMARY
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.:
R3630469-2

Lab Sample ID:	R3630469-2	**SDG:**	L1325480
Client Sample ID:	LCS	**Collected Date/Time:**	_____
Lab File ID:	20210314040448	**Received Date/Time:**	_____
Instrument ID:	LACHAT4	**Preparation Date/Time:**	03/12/21 20:01
Analytical Batch:	WG1633983	**Analysis Date/Time:**	03/14/21 04:04
Dilution Factor:	1	**Prep Method:**	9012B/4500 CN E2011/
Analytical Method:	4500CN E-2011	**Sample Vol Used:**	_____
Matrix:	WW	**Initial Wt/Vol:**	50 mL
Total Solids (%):	_____	**Final Wt/Vol:**	50 mL

Analyte	CAS	Result	Qualifier	MDL	RDL
		mg/l		*mg/l*	*mg/l*
Cyanide	57-12-5	0.110		0.00180	0.00500

1-IN

SAMPLE RESULT SUMMARY
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.:
R3630469-8

Lab Sample ID:	R3630469-8	**SDG:**	L1325480
Client Sample ID:	DUP	**Collected Date/Time:**	03/09/21 09:15
Lab File ID:	20210314043022	**Received Date/Time:**	03/11/21 09:00
Instrument ID:	LACHAT4	**Preparation Date/Time:**	03/12/21 20:01
Analytical Batch:	WG1633983	**Analysis Date/Time:**	03/14/21 04:30
Dilution Factor:	1	**Prep Method:**	9012B/4500 CN E2011/
Analytical Method:	4500CN E-2011	**Sample Vol Used:**	_____
Matrix:	WW	**Initial Wt/Vol:**	50 mL
Total Solids (%):	_____	**Final Wt/Vol:**	50 mL

Analyte	CAS	Result	Qualifier	MDL	RDL
		mg/l		*mg/l*	*mg/l*
Cyanide	57-12-5	0.0800		0.00180	0.00500

1-IN

SAMPLE RESULT SUMMARY
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.:
R3630469-3

Lab Sample ID:	R3630469-3	**SDG:**	L1325480
Client Sample ID:	MS	**Collected Date/Time:**	03/05/21 17:45
Lab File ID:	20210314041157	**Received Date/Time:**	03/10/21 09:00
Instrument ID:	LACHAT4	**Preparation Date/Time:**	03/12/21 20:01
Analytical Batch:	WG1633983	**Analysis Date/Time:**	03/14/21 04:11
Dilution Factor:	1	**Prep Method:**	9012B/4500 CN E2011/
Analytical Method:	4500CN E-2011	**Sample Vol Used:**	_____
Matrix:	WW	**Initial Wt/Vol:**	50 mL
Total Solids (%):	_____	**Final Wt/Vol:**	50 mL

Analyte	CAS	Result	Qualifier	MDL	RDL
		mg/l		*mg/l*	*mg/l*
Cyanide	57-12-5	0.0244	J6	0.00180	0.00500

1-IN

SAMPLE RESULT SUMMARY
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.:
R3630469-5

Lab Sample ID:	R3630469-5	**SDG:**	L1325480
Client Sample ID:	MS	**Collected Date/Time:**	03/03/21 13:00
Lab File ID:	20210314042109	**Received Date/Time:**	03/11/21 09:00
Instrument ID:	LACHAT4	**Preparation Date/Time:**	03/12/21 20:01
Analytical Batch:	WG1633983	**Analysis Date/Time:**	03/14/21 04:21
Dilution Factor:	1	**Prep Method:**	9012B/4500 CN E2011/
Analytical Method:	4500CN E-2011	**Sample Vol Used:**	_____
Matrix:	WW	**Initial Wt/Vol:**	50 mL
Total Solids (%):	_____	**Final Wt/Vol:**	50 mL

Analyte	CAS	Result	Qualifier	MDL	RDL
		mg/l		*mg/l*	*mg/l*
Cyanide	57-12-5	0.142	J6	0.00180	0.00500

1-IN

SAMPLE RESULT SUMMARY
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.:
R3630469-4

Lab Sample ID:	R3630469-4	**SDG:**	L1325480
Client Sample ID:	MSD	**Collected Date/Time:**	03/05/21 17:45
Lab File ID:	20210314041258	**Received Date/Time:**	03/10/21 09:00
Instrument ID:	LACHAT4	**Preparation Date/Time:**	03/12/21 20:01
Analytical Batch:	WG1633983	**Analysis Date/Time:**	03/14/21 04:12
Dilution Factor:	1	**Prep Method:**	9012B/4500 CN E2011/
Analytical Method:	4500CN E-2011	**Sample Vol Used:**	_____
Matrix:	WW	**Initial Wt/Vol:**	50 mL
Total Solids (%):	_____	**Final Wt/Vol:**	50 mL

Analyte	CAS	Result	Qualifier	MDL	RDL
		mg/l		*mg/l*	*mg/l*
Cyanide	57-12-5	0.0141	J3 J6	0.00180	0.00500

1-IN

SAMPLE RESULT SUMMARY
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.:
R3630469-6

Lab Sample ID:	R3630469-6	**SDG:**	L1325480
Client Sample ID:	MSD	**Collected Date/Time:**	03/03/21 13:00
Lab File ID:	20210314042210	**Received Date/Time:**	03/11/21 09:00
Instrument ID:	LACHAT4	**Preparation Date/Time:**	03/12/21 20:01
Analytical Batch:	WG1633983	**Analysis Date/Time:**	03/14/21 04:22
Dilution Factor:	1	**Prep Method:**	9012B/4500 CN E2011/
Analytical Method:	4500CN E-2011	**Sample Vol Used:**	_____
Matrix:	WW	**Initial Wt/Vol:**	50 mL
Total Solids (%):	_____	**Final Wt/Vol:**	50 mL

Analyte	CAS	Result	Qualifier	MDL	RDL
		mg/l		*mg/l*	*mg/l*
Cyanide	57-12-5	0.190	J3 J6	0.00180	0.00500

2-IN

CALIBRATION VERIFICATION

SDG:	L1325480	**Calibration (begin) date/time:**	03/13/21 23:09
Instrument ID:	LACHAT4	**Calibration (end) date/time:**	03/13/21 23:14
Analytical Method:	4500CN E-2011	**Analytical Run:**	R031421_3
Concentration Units:	mg/L		

	ICV				CCV				CCV			
Sample ID:	LACHAT4031421040245-2				LACHAT4031421041359-2				LACHAT4031421042616			
Analyte	True	Found	%R	%RSD	True	Found	%R	%RSD	True	Found	%R	%RSD
CYANIDE	0.10	0.09840	98.40		0.10	0.09870	98.70		0.10	0.09870	98.70	
REACTIVE CYANIDE	0.10	0.09840	98.40		0.10	0.09870	98.70		0.10	0.09870	98.70	

ICV Limits: 90 - 110 CCV Limits: 90 - 110

2-IN

CALIBRATION VERIFICATION

SDG:	L1325480	**Calibration (begin) date/time:**	03/13/21 23:09
Instrument ID:	LACHAT4	**Calibration (end) date/time:**	03/13/21 23:14
Analytical Method:	4500CN E-2011	**Analytical Run:**	R031421_3
Concentration Units:	mg/L		

CCV

Sample ID: LACHAT4031421043836-2

Analyte	True	Found	%R	%RSD
CYANIDE	0.10	0.09790	97.90	
REACTIVE CYANIDE	0.10	0.09790	97.90	

ICV Limits: 90 - 110 CCV Limits: 90 - 110

3-IN BLANKS

SDG:	L1325480	**Calibration (begin) date/time:**	03/13/21 23:09
Instrument ID:	LACHAT4	**Calibration (end) date/time:**	03/13/21 23:14
Analytical Method:	4500CN E-2011	**Analytical Run:**	R031421_3

Sample ID:	**BLANK Result**	**BLANK Qual**	**CCB Result**	**CCB Qual**	**CCB Result**	**CCB Qual**	**CCB Result**	**CCB Qual**
File ID:	20210314040347		20210314041500-2		20210314042717		20210314043936-2	
Analyte	mg/l		mg/L		mg/L		mg/L	
CYANIDE	U		-0.001050		0.0001980		-0.0003970	
REACTIVE CYANIDE			-0.001050		0.0001980		-0.0003970	

5A-IN

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

L1325480-01

SAMPLE NO.:
R3630469-3
R3630469-4

MS Sample / File ID:	R3630469-3 / 20210314041157	**SDG:**	L1325480
MSD Sample / File ID:	R3630469-4 / 20210314041258	**Analytical Batch:**	WG1633983
OS Sample / File ID:	L1325250-01 / 20210314041055	**Matrix:**	WW
Instrument ID:	LACHAT4		
Analytical Method:	4500CN E-2011		

Analyte	Spike Amount	OS Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	RPD	RPD Limits
	mg/l	*mg/l*	*mg/l*	*mg/l*	*%*	*%*		*%*	*%*	*%*
Cyanide	0.100	ND	0.0244	0.0141	22.2*	11.9*	1	90.0 - 110	53.5*	20

*: Value outside the established quality control limits.

D: Surrogate recovery cannot be used for control limit evaluation due to dilution.

5A-IN

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

L1325480-01

SAMPLE NO.:
R3630469-5
R3630469-6

MS Sample / File ID:	R3630469-5 / 20210314042109	**SDG:**	L1325480
MSD Sample / File ID:	R3630469-6 / 20210314042210	**Analytical Batch:**	WG1633983
OS Sample / File ID:	L1325471-01 / 20210314042008	**Matrix:**	WW
Instrument ID:	LACHAT4		
Analytical Method:	4500CN E-2011		

Analyte	Spike Amount	OS Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	RPD	RPD Limits
	mg/l	*mg/l*	*mg/l*	*mg/l*	*%*	*%*		*%*	*%*	*%*
Cyanide	0.100	0.131	0.142	0.190	11.0*	59.0*	1	90.0 - 110	28.9*	20

*: Value outside the established quality control limits.

D: Surrogate recovery cannot be used for control limit evaluation due to dilution.

6-IN

DUPLICATES
L1325480-01

SAMPLE NO.:
R3630469-7

DUP Sample / File ID:	R3630469-7 / 20210314042819	**SDG:**	L1325480
OS Sample / File ID:	L1325471-05 / 20210314042514	**Analytical Batch:**	WG1633983
Instrument ID:	LACHAT4	**Dilution Factor:**	1
Analytical Method:	4500CN E-2011	**Matrix:**	WW

Analyte	OS Result	DUP Result	RPD	RPD Limits
	mg/l	*mg/l*	*mg/l*	*mg/l*
Cyanide	0.0208	ND	200*	20

*: Value outside the established quality control limits.
D: Surrogate recovery cannot be used for control limit evaluation due to dilution.

6-IN

DUPLICATES
L1325480-01

SAMPLE NO.:
R3630469-8

DUP Sample / File ID:	R3630469-8 / 20210314043022	**SDG:**	L1325480
OS Sample / File ID:	L1325480-01 / 20210314042920	**Analytical Batch:**	WG1633983
Instrument ID:	LACHAT4	**Dilution Factor:**	1
Analytical Method:	4500CN E-2011	**Matrix:**	WW

Analyte	OS Result	DUP Result	RPD	RPD Limits
	mg/l	*mg/l*	*mg/l*	*mg/l*
Cyanide	0.0813	0.0800	1.61	20

*: Value outside the established quality control limits.
D: Surrogate recovery cannot be used for control limit evaluation due to dilution.

7-IN

LABORATORY CONTROL SAMPLE
LABORATORY CONTROL SAMPLE DUPLICATE RECOVERY
L1325480-01

SAMPLE NO.:
R3630469-2

LCS Sample / File ID:	R3630469-2 / 20210314040448	**SDG:**	L1325480
LCSD Sample / File ID:	_____	**Analytical Batch:**	WG1633983
Instrument ID:	LACHAT4	**Dilution Factor:**	1
Analytical Method:	4500CN E-2011	**Matrix:**	WW

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	RPD	RPD Limits
	mg/l	*mg/l*		*%*	*%*	*%*	*%*	*%*
Cyanide	0.100	0.110		110		87.1 - 120		

*: Value outside the established quality control limits.
D: Surrogate recovery cannot be used for control limit evaluation due to dilution.

9-IN

DETECTION LIMIT SUMMARY

Lab Sample IDs: L1325480-01 **Analytical Method:** 4500CN E-2011

Matrix: WW **Prep Method:** 9012B/4500 CN E2011/

Analyte	CAS	Wavelength	Mass	MDL	RDL
				mg/l	*mg/l*
Cyanide	57-12-5			0.0018	0.0050

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

Coef1	First Order Coefficient.
Coef2	Second Order Coefficient.
Corr.	Correlation Coefficient.
Incpt	Intercept.
Mass	Mass of parameter.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
RSD	Relative Standard Deviation.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Slope	Slope of calibration curve.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Wavelength	Wavelength of parameter.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
NI	Manual Integration Code to indicate that the peak was not integrated at all by the computer software.
LT	Manual Integration Code to indicate that the peak in question was inappropriately integrated to an area less than what it should be (i.e., peak area was cut).
GT	Manual Integration Code to indicate that the peak in question was inappropriately integrated to an area greater than it should be (i.e., peak tailing).
BA	Manual Integration Code to indicate that the baseline had to be adjusted correctly by the analyst.
WP	Manual Integration Code to indicate that the wrong peak was chosen.
CO	Manual Integration Code to indicate that the analyst had to split two co-eluting peaks apart that were not (or could not be) separated by the computer system.
RT	Manual Integration Code to indicate that the retention time for the peak in question has shifted from the expected retention time.
INT	Manual Integration Code to indicate that there was electronic interference (i.e., noise).

GLOSSARY OF TERMS

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN		PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS: 12065 Lebanon Rd			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: Mt. Juliet, TN 37122					L1325480

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2103470-002G	OAPIS-1	500AMBHDP E-NAOH	Aqueous	3/9/2021 9:15:00 AM	1	Total Cyanide Lv.4 J/MDL DUE 3/23

C241

Sample Receipt Checklist

COC Seal Present/Intact: __Y_✓_N
COC Signed/Accurate: ✓Y___N
Bottles arrive intact: ✓Y___N
Correct bottles used: ✓Y___N
Sufficient volume sent: ✓Y___N
RAD Screen <0.5 mR/hr: ✓Y___N

If Applicable
VOA Zero Headspace: __Y__N
Pres.Correct/Check: __Y__N

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 3/9/2021	Time: 4:47 PM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 3/11	Time: 9:00

TAT: Standard X RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 1.6 1.2 1.8 C Attempt to Cool ?
Comments:

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58668** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **58668** RunNo: **75907**
Prep Date: **3/11/2021** Analysis Date: **3/12/2021** SeqNo: **2685793** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS-58668** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **58668** RunNo: **75907**
Prep Date: **3/11/2021** Analysis Date: **3/12/2021** SeqNo: **2685794** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.013	0.020	0.01000	0	129	50	150			J
Barium	0.0015	0.0030	0.002000	0	77.0	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	94.3	50	150			J
Boron	0.038	0.040	0.04000	0	94.0	50	150			J
Cadmium	0.0015	0.0020	0.002000	0	75.6	50	150			J
Chromium	0.0056	0.0060	0.006000	0	92.6	50	150			J
Cobalt	0.0060	0.0060	0.006000	0	100	50	150			
Copper	0.0055	0.0060	0.006000	0	91.7	50	150			J
Iron	0.023	0.050	0.02000	0	115	50	150			J
Manganese	0.0022	0.0020	0.002000	0	110	50	150			
Molybdenum	0.010	0.0080	0.008000	0	125	50	150			
Nickel	0.0039	0.010	0.005000	0	77.6	50	150			J
Silver	0.0048	0.0050	0.005000	0	95.4	50	150			J
Zinc	0.010	0.010	0.01000	0	104	50	150			

Sample ID: **LCS-58668** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **58668** RunNo: **75907**
Prep Date: **3/11/2021** Analysis Date: **3/12/2021** SeqNo: **2685795** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS-58668** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **58668** RunNo: **75907**
Prep Date: **3/11/2021** Analysis Date: **3/12/2021** SeqNo: **2685795** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	108	85	115			
Barium	0.50	0.0030	0.5000	0	99.8	85	115			
Beryllium	0.50	0.0020	0.5000	0	101	85	115			
Boron	0.50	0.040	0.5000	0	100	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.1	85	115			
Chromium	0.48	0.0060	0.5000	0	96.8	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.7	85	115			
Copper	0.48	0.0060	0.5000	0	97.0	85	115			
Iron	0.49	0.050	0.5000	0	98.0	85	115			
Manganese	0.48	0.0020	0.5000	0	96.1	85	115			
Molybdenum	0.50	0.0080	0.5000	0	99.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.4	85	115			
Silver	0.090	0.0050	0.1000	0	90.4	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Sample ID: **2103470-001FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-24** Batch ID: **58668** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686779** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.48	0.0020	0.5000	0	96.3	70	130			
Cadmium	0.44	0.0020	0.5000	0	88.8	70	130			
Chromium	0.47	0.0060	0.5000	0	93.7	70	130			
Cobalt	0.46	0.0060	0.5000	0.01422	88.6	70	130			
Copper	0.50	0.0060	0.5000	0	99.9	70	130			
Molybdenum	0.46	0.0080	0.5000	0	92.8	70	130			
Nickel	0.46	0.010	0.5000	0.03426	85.9	70	130			
Silver	0.11	0.0050	0.1000	0.004162	104	70	130			
Zinc	0.45	0.010	0.5000	0.007518	87.6	70	130			

Sample ID: **2103470-001FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-24** Batch ID: **58668** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686780** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.50	0.0020	0.5000	0	99.7	70	130	3.54	20	
Cadmium	0.46	0.0020	0.5000	0	92.3	70	130	3.90	20	
Chromium	0.49	0.0060	0.5000	0	97.1	70	130	3.61	20	
Cobalt	0.47	0.0060	0.5000	0.01422	91.2	70	130	2.84	20	
Copper	0.50	0.0060	0.5000	0	101	70	130	0.657	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103470-001FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-24** Batch ID: **58668** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686780** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.48	0.0080	0.5000	0	96.6	70	130	4.07	20	
Nickel	0.48	0.010	0.5000	0.03426	88.9	70	130	3.26	20	
Silver	0.11	0.0050	0.1000	0.004162	108	70	130	4.39	20	
Zinc	0.46	0.010	0.5000	0.007518	90.8	70	130	3.48	20	

Sample ID: **2103470-001FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-24** Batch ID: **58668** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686782** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	1.2	0.015	0.5000	0.6707	96.6	70	130			
Boron	1.2	0.20	0.5000	0.7023	106	70	130			
Iron	3.5	0.25	0.5000	1.831	339	70	130			S
Manganese	3.8	0.010	0.5000	3.393	72.4	70	130			

Sample ID: **2103470-001FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-24** Batch ID: **58668** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686783** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	1.1	0.015	0.5000	0.6707	92.5	70	130	1.79	20	
Boron	1.2	0.20	0.5000	0.7023	102	70	130	1.80	20	
Iron	3.5	0.25	0.5000	1.831	344	70	130	0.691	20	S
Manganese	3.8	0.010	0.5000	3.393	82.4	70	130	1.32	20	

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689796** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689796** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689798** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.011	0.020	0.01000	0	109	50	150			J
Barium	0.0021	0.0030	0.002000	0	103	50	150			J
Beryllium	0.0013	0.0020	0.002000	0	66.7	50	150			J
Boron	0.039	0.040	0.04000	0	97.6	50	150			J
Cadmium	0.0019	0.0020	0.002000	0	95.1	50	150			J
Calcium	0.54	1.0	0.5000	0	108	50	150			J
Chromium	0.0055	0.0060	0.006000	0	91.8	50	150			J
Cobalt	0.0079	0.0060	0.006000	0	131	50	150			
Copper	0.0064	0.0060	0.006000	0	106	50	150			
Iron	0.024	0.050	0.02000	0	121	50	150			J
Magnesium	0.54	1.0	0.5000	0	109	50	150			J
Manganese	0.0022	0.0020	0.002000	0	108	50	150			
Molybdenum	0.0077	0.0080	0.008000	0	96.7	50	150			J
Nickel	0.0036	0.010	0.005000	0	71.5	50	150			J
Potassium	0.47	1.0	0.5000	0	93.1	50	150			J
Silver	0.0045	0.0050	0.005000	0	89.5	50	150			J
Sodium	0.54	1.0	0.5000	0	107	50	150			J
Zinc	0.0090	0.010	0.01000	0	90.0	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689800** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	112	85	115			
Barium	0.52	0.0030	0.5000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689800** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.52	0.0020	0.5000	0	103	85	115			
Boron	0.52	0.040	0.5000	0	105	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Calcium	51	1.0	50.00	0	102	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.2	85	115			
Copper	0.50	0.0060	0.5000	0	100	85	115			
Iron	0.52	0.050	0.5000	0	104	85	115			
Magnesium	52	1.0	50.00	0	105	85	115			
Manganese	0.51	0.0020	0.5000	0	101	85	115			
Molybdenum	0.52	0.0080	0.5000	0	104	85	115			
Nickel	0.49	0.010	0.5000	0	97.6	85	115			
Potassium	50	1.0	50.00	0	101	85	115			
Silver	0.093	0.0050	0.1000	0	93.5	85	115			
Sodium	52	1.0	50.00	0	104	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689797** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689799** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.011	0.020	0.01000	0	109	50	150			J
Barium	0.0021	0.0020	0.002000	0	103	50	150			
Beryllium	0.0013	0.0020	0.002000	0	66.7	50	150			J
Boron	0.039	0.040	0.04000	0	97.6	50	150			J
Cadmium	0.0019	0.0020	0.002000	0	95.1	50	150			J
Calcium	0.54	1.0	0.5000	0	108	50	150			J
Chromium	0.0055	0.0060	0.006000	0	91.8	50	150			J
Cobalt	0.0079	0.0060	0.006000	0	131	50	150			
Copper	0.0064	0.0060	0.006000	0	106	50	150			
Iron	0.024	0.020	0.02000	0	121	50	150			
Magnesium	0.54	1.0	0.5000	0	109	50	150			J
Manganese	0.0022	0.0020	0.002000	0	108	50	150			
Molybdenum	0.0077	0.0080	0.008000	0	96.7	50	150			J
Nickel	0.0036	0.010	0.005000	0	71.5	50	150			J
Potassium	0.47	1.0	0.5000	0	93.1	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A75995**	RunNo: **75995**
Prep Date:	Analysis Date: **3/17/2021**	SeqNo: **2689799** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.0045	0.0050	0.005000	0	89.5	50	150			J
Sodium	0.54	1.0	0.5000	0	107	50	150			J
Zinc	0.0090	0.010	0.01000	0	90.0	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A75995**	RunNo: **75995**
Prep Date:	Analysis Date: **3/17/2021**	SeqNo: **2689801** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	112	85	115			
Barium	0.52	0.0020	0.5000	0	104	85	115			
Beryllium	0.52	0.0020	0.5000	0	103	85	115			
Boron	0.52	0.040	0.5000	0	105	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Calcium	51	1.0	50.00	0	102	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.2	85	115			
Copper	0.50	0.0060	0.5000	0	100	85	115			
Iron	0.52	0.020	0.5000	0	104	85	115			
Magnesium	52	1.0	50.00	0	105	85	115			
Manganese	0.51	0.0020	0.5000	0	101	85	115			
Molybdenum	0.52	0.0080	0.5000	0	104	85	115			
Nickel	0.49	0.010	0.5000	0	97.6	85	115			
Potassium	50	1.0	50.00	0	101	85	115			
Silver	0.093	0.0050	0.1000	0	93.5	85	115			
Sodium	52	1.0	50.00	0	104	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58668** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **58668** RunNo: **75932**
Prep Date: **3/11/2021** Analysis Date: **3/12/2021** SeqNo: **2686965** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	0.00010	0.0010								J
Thallium	).0000029	0.00025								J

Sample ID: **MSLLLCS-58668** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **58668** RunNo: **75932**
Prep Date: **3/11/2021** Analysis Date: **3/12/2021** SeqNo: **2686966** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0012	0.0010	0.001000	0	120	50	150			
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			
Lead	0.00054	0.00050	0.0005000	0	108	50	150			
Selenium	0.0012	0.0010	0.001000	0	124	50	150			

Sample ID: **MSLCS-58668** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **58668** RunNo: **75932**
Prep Date: **3/11/2021** Analysis Date: **3/12/2021** SeqNo: **2686967** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.4	85	115			
Arsenic	0.025	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.024	0.0010	0.02500	0	95.0	85	115			
Thallium	0.013	0.00025	0.01250	0	101	85	115			

Sample ID: **MSLLLCS-TL-58668** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **58668** RunNo: **75932**
Prep Date: **3/11/2021** Analysis Date: **3/12/2021** SeqNo: **2686968** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	0.00024	0.00025	0.0002500	0	97.8	50	150			J

Sample ID: **2103470-002FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **OAPIS-1** Batch ID: **58668** RunNo: **75932**
Prep Date: **3/11/2021** Analysis Date: **3/12/2021** SeqNo: **2687008** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0050	0.02500	0	107	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103470-002FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **OAPIS-1** Batch ID: **58668** RunNo: **75932**
Prep Date: **3/11/2021** Analysis Date: **3/12/2021** SeqNo: **2687008** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.035	0.0050	0.02500	0.007191	111	70	130			
Lead	0.018	0.0025	0.01250	0.008284	81.1	70	130			
Selenium	0.032	0.0050	0.02500	0	129	70	130			
Thallium	0.011	0.0012	0.01250	0	85.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B75881** RunNo: **75881**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2684760** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00050								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B75881** RunNo: **75881**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2684761** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	104	50	150			
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.0012	0.0010	0.001000	0	125	50	150			
Thallium	0.00051	0.00050	0.0005000	0	103	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B75881** RunNo: **75881**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2684762** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.9	85	115			
Arsenic	0.025	0.0010	0.02500	0	99.7	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.024	0.0010	0.02500	0	96.6	85	115			
Thallium	0.013	0.00050	0.01250	0	100	85	115			

Sample ID: **2103470-009DMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB 3/9/2021** Batch ID: **B75881** RunNo: **75881**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2684808** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.1	70	130			
Arsenic	0.024	0.0010	0.02500	0	96.5	70	130			
Lead	0.012	0.00050	0.01250	0	93.6	70	130			
Selenium	0.024	0.0010	0.02500	0	96.5	70	130			
Thallium	0.012	0.00050	0.01250	0	94.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103470-009DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB 3/9/2021** Batch ID: **B75881** RunNo: **75881**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2684809** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.3	70	130	0.168	20	
Arsenic	0.025	0.0010	0.02500	0	101	70	130	4.41	20	
Lead	0.012	0.00050	0.01250	0	94.5	70	130	0.913	20	
Selenium	0.025	0.0010	0.02500	0	98.8	70	130	2.38	20	
Thallium	0.012	0.00050	0.01250	0	95.5	70	130	1.41	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58745** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **58745** RunNo: **75992**
Prep Date: **3/16/2021** Analysis Date: **3/16/2021** SeqNo: **2689618** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-58745** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **58745** RunNo: **75992**
Prep Date: **3/16/2021** Analysis Date: **3/16/2021** SeqNo: **2689619** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00017	0.00020	0.0001500	0	112	50	150			J

Sample ID: **LCS-58745** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **58745** RunNo: **75992**
Prep Date: **3/16/2021** Analysis Date: **3/16/2021** SeqNo: **2689620** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	106	85	115			

Sample ID: **2103470-003EMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **MKTF-29** Batch ID: **58745** RunNo: **75992**
Prep Date: **3/16/2021** Analysis Date: **3/16/2021** SeqNo: **2689627** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0039	0.00020	0.005000	0	77.3	75	125			

Sample ID: **2103470-003EMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **MKTF-29** Batch ID: **58745** RunNo: **75992**
Prep Date: **3/16/2021** Analysis Date: **3/16/2021** SeqNo: **2689630** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0039	0.00020	0.005000	0	79.0	75	125	2.17	20	

Sample ID: **MB-58800** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **58800** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691840** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LLLCS-58800**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **58800**	RunNo: **76049**
Prep Date: **3/17/2021**	Analysis Date: **3/18/2021**	SeqNo: **2691841** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00013	0.00020	0.0001500	0	83.6	50	150			J

Sample ID: **LCS-58000**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **58800**	RunNo: **76049**
Prep Date: **3/17/2021**	Analysis Date: **3/18/2021**	SeqNo: **2691842** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R75825** RunNo: **75825**
Prep Date: Analysis Date: **3/9/2021** SeqNo: **2682748** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R75825** RunNo: **75825**
Prep Date: Analysis Date: **3/9/2021** SeqNo: **2682749** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	101	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.1	90	110			
Bromide	2.6	0.10	2.500	0	104	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	96.3	90	110			
Phosphorus, Orthophosphate (As P	4.5	0.50	5.000	0	90.1	90	110			
Sulfate	9.6	0.50	10.00	0	96.1	90	110			

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R75861** RunNo: **75861**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2684104** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	0.020	0.10								J
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R75861** RunNo: **75861**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2684105** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	105	90	110			
Chloride	4.9	0.50	5.000	0	97.4	90	110			
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	98.3	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R75861** RunNo: **75861**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2684105** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.7	0.10	2.500	0	107	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.2	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	96.3	90	110			
Sulfate	9.9	0.50	10.00	0	99.0	90	110			

Sample ID: **2103470-009CMS** SampType: **ms** TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 3/9/2021** Batch ID: **R75861** RunNo: **75861**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2684115** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	103	73.3	111			
Chloride	4.8	0.50	5.000	0	95.4	84.2	117			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.2	75.5	113			
Bromide	2.6	0.10	2.500	0	105	85.9	106			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.2	86.8	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	94.0	70.5	118			
Sulfate	9.7	0.50	10.00	0	97.0	83.3	112			

Sample ID: **2103470-009CMSD** SampType: **msd** TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 3/9/2021** Batch ID: **R75861** RunNo: **75861**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2684116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	105	73.3	111	1.45	20	
Chloride	4.8	0.50	5.000	0	96.9	84.2	117	1.63	20	
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	97.9	75.5	113	1.71	20	
Bromide	2.7	0.10	2.500	0	107	85.9	106	1.71	20	S
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.9	86.8	110	1.75	20	
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.8	70.5	118	1.96	20	
Sulfate	9.9	0.50	10.00	0	98.6	83.3	112	1.67	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58711** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687472** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-58711** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687474** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-58711** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687476** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	114	70	130			

Sample ID: **LCSD-58711** SampType: **LCSD** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687477** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	107	70	130	5.93	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS-58742** SampType: **LCS** TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **LCSW** Batch ID: **58742** RunNo: **76431**
Prep Date: **3/16/2021** Analysis Date: **3/23/2021** SeqNo: **2707377** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.20	0.085	0.6000	0	33.8	21.1	126			
Surr: DNOP	0.054		0.06000		89.7	45.1	141			

Sample ID: **LCSD-58742** SampType: **LCSD** TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **LCSS02** Batch ID: **58742** RunNo: **76431**
Prep Date: **3/16/2021** Analysis Date: **3/23/2021** SeqNo: **2707378** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.24	0.085	0.6000	0	40.1	21.1	126	17.2	20	
Surr: DNOP	0.056		0.06000		92.8	45.1	141	0	0	

Sample ID: **MB-58742** SampType: **MBLK** TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **PBW** Batch ID: **58742** RunNo: **76431**
Prep Date: **3/16/2021** Analysis Date: **3/23/2021** SeqNo: **2707380** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.085								
Motor Oil Range Organics (MRO)	ND	0.60								
Surr: DNOP	0.12		0.1200		96.1	45.1	141			

NOTES:
See the Case Narrative Regarding the DRO results listed above.
See the Case Narrative Regarding the DRO results listed above.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **100ng lcs**	SampType: **LCS4**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **BatchQC**	Batch ID: **C76015**	RunNo: **76015**
Prep Date:	Analysis Date: **3/17/2021**	SeqNo: **2691287** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	92.1	80	120			
Toluene	18	1.0	20.00	0	90.8	80	120			
Ethylbenzene	ND	1.0	20.00	0	0	80	120			S
Methyl tert-butyl ether (MTBE)	ND	1.0	40.00	0	0	80	120			S
Xylenes, Total	ND	1.5	60.00	0	0	80	120			S
Surr: 1,2-Dichloroethane-d4	8.5		10.00		85.3	70	130			
Surr: 4-Bromofluorobenzene	8.5		10.00		84.7	70	130			
Surr: Dibromofluoromethane	8.8		10.00		87.6	70	130			
Surr: Toluene-d8	8.3		10.00		83.3	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **C76015**	RunNo: **76015**
Prep Date:	Analysis Date: **3/17/2021**	SeqNo: **2691288** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.5		10.00		84.9	70	130			
Surr: 4-Bromofluorobenzene	8.6		10.00		85.9	70	130			
Surr: Dibromofluoromethane	8.7		10.00		86.8	70	130			
Surr: Toluene-d8	8.3		10.00		82.6	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A75890**	RunNo: **75890**
Prep Date:	Analysis Date: **3/11/2021**	SeqNo: **2685216** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	17	1.0	20.00	0	83.8	70	130			
Toluene	18	1.0	20.00	0	88.9	70	130			
Chlorobenzene	16	1.0	20.00	0	82.1	70	130			
1,1-Dichloroethene	16	1.0	20.00	0	78.4	70	130			
Trichloroethene (TCE)	15	1.0	20.00	0	73.3	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		114	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		114	70	130			
Surr: Toluene-d8	11		10.00		115	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A75890**	RunNo: **75890**
Prep Date:	Analysis Date: **3/11/2021**	SeqNo: **2685234** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A75890**	RunNo: **75890**
Prep Date:	Analysis Date: **3/11/2021**	SeqNo: **2685234** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A75890** RunNo: **75890**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685234** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	11		10.00		113	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **A76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690792** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	92.1	70	130			
Toluene	18	1.0	20.00	0	90.8	70	130			
Chlorobenzene	17	1.0	20.00	0	84.0	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	89.3	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	84.9	70	130			
Surr: 1,2-Dichloroethane-d4	8.5		10.00		85.3	70	130			
Surr: 4-Bromofluorobenzene	8.5		10.00		84.7	70	130			
Surr: Dibromofluoromethane	8.8		10.00		87.6	70	130			
Surr: Toluene-d8	8.3		10.00		83.3	70	130			

Sample ID: **2103470-009a ms** SampType: **MS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **EB 3/9/2021** Batch ID: **A76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690800** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	88.9	70	130			
Toluene	16	1.0	20.00	0	80.9	70	130			
Chlorobenzene	15	1.0	20.00	0	75.3	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	87.2	70	130			
Trichloroethene (TCE)	16	1.0	20.00	0	78.9	70	130			
Surr: 1,2-Dichloroethane-d4	9.1		10.00		91.3	70	130			
Surr: 4-Bromofluorobenzene	8.5		10.00		85.4	70	130			
Surr: Dibromofluoromethane	9.3		10.00		92.6	70	130			
Surr: Toluene-d8	8.0		10.00		80.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103470-009a msd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **EB 3/9/2021** Batch ID: **A76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690801** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	89.4	70	130	0.506	20	
Toluene	16	1.0	20.00	0	80.5	70	130	0.456	20	
Chlorobenzene	15	1.0	20.00	0	76.1	70	130	1.14	20	
1,1-Dichloroethene	16	1.0	20.00	0	80.5	70	130	8.07	20	
Trichloroethene (TCE)	16	1.0	20.00	0	78.5	70	130	0.463	20	
Surr: 1,2-Dichloroethane-d4	8.7		10.00		87.5	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.1		10.00		90.9	70	130	0	0	
Surr: Dibromofluoromethane	9.3		10.00		93.1	70	130	0	0	
Surr: Toluene-d8	8.2		10.00		82.4	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690819** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A76015**	RunNo: **76015**
Prep Date:	Analysis Date: **3/17/2021**	SeqNo: **2690819** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690819** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.5		10.00		84.9	70	130			
Surr: 4-Bromofluorobenzene	8.6		10.00		85.9	70	130			
Surr: Dibromofluoromethane	8.7		10.00		86.8	70	130			
Surr: Toluene-d8	8.3		10.00		82.6	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **A76055** RunNo: **76055**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2692166** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.4	70	130			
Toluene	18	1.0	20.00	0	92.4	70	130			
Chlorobenzene	17	1.0	20.00	0	86.2	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	94.6	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	91.9	70	130			
Surr: 1,2-Dichloroethane-d4	8.7		10.00		87.1	70	130			
Surr: 4-Bromofluorobenzene	8.7		10.00		86.9	70	130			
Surr: Dibromofluoromethane	9.2		10.00		92.3	70	130			
Surr: Toluene-d8	8.4		10.00		84.1	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A76055** RunNo: **76055**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2692204** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A76055**	RunNo: **76055**
Prep Date:	Analysis Date: **3/18/2021**	SeqNo: **2692204** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	0.41	3.0								J
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A76055**	RunNo: **76055**
Prep Date:	Analysis Date: **3/18/2021**	SeqNo: **2692204** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.9		10.00		88.8	70	130			
Surr: 4-Bromofluorobenzene	8.5		10.00		84.8	70	130			
Surr: Dibromofluoromethane	9.0		10.00		89.6	70	130			
Surr: Toluene-d8	8.3		10.00		83.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58648**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **58648**	RunNo: **76019**
Prep Date: **3/10/2021**	Analysis Date: **3/17/2021**	SeqNo: **2690919** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Azobenzene	ND	5.0								
Benzoic acid	ND	5.0								
Benzyl alcohol	ND	5.0								
Bis(2-chloroethoxy)methane	ND	5.0								
Bis(2-chloroethyl)ether	ND	5.0								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	6.6	10								J
4-Bromophenyl phenyl ether	ND	5.0								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
2-Chloronaphthalene	ND	5.0								
2-Chlorophenol	ND	5.0								
4-Chlorophenyl phenyl ether	ND	5.0								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenzofuran	ND	5.0								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
3,3´-Dichlorobenzidine	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	5.0								
4,6-Dinitro-2-methylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	5.0								
Hexachlorobenzene	ND	5.0								
Hexachlorobutadiene	ND	5.0								
Hexachlorocyclopentadiene	ND	5.0								
Hexachloroethane	ND	5.0								
Isophorone	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
N-Nitrosodi-n-propylamine	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58648** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **58648** RunNo: **76019**
Prep Date: **3/10/2021** Analysis Date: **3/17/2021** SeqNo: **2690919** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	5.0								
2-Nitroaniline	ND	5.0								
3-Nitroaniline	ND	5.0								
4-Nitroaniline	ND	5.0								
Nitrobenzene	ND	5.0								
2-Nitrophenol	ND	5.0								
4-Nitrophenol	ND	5.0								
Pentachlorophenol	ND	5.0								
Phenol	ND	5.0								
Pyridine	ND	5.0								
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	100		200.0		52.2	15	88.8			
Surr: Phenol-d5	82		200.0		40.9	15	71.9			
Surr: 2,4,6-Tribromophenol	120		200.0		58.4	15	97.4			
Surr: Nitrobenzene-d5	65		100.0		65.1	15	117			
Surr: 2-Fluorobiphenyl	63		100.0		63.0	15	100			
Surr: 4-Terphenyl-d14	97		100.0		97.4	15	120			

Sample ID: **lcs-58648** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **58648** RunNo: **76019**
Prep Date: **3/10/2021** Analysis Date: **3/17/2021** SeqNo: **2690920** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	140	5.0	200.0	0	68.6	27.5	113			
2-Chlorophenol	150	5.0	200.0	0	75.9	17.9	103			
1,4-Dichlorobenzene	60	5.0	100.0	0	60.2	15	79.9			
2,4-Dinitrotoluene	60	5.0	100.0	0	59.6	22.9	97.2			
N-Nitrosodi-n-propylamine	69	5.0	100.0	0	69.5	34.1	104			
4-Nitrophenol	93	5.0	200.0	0	46.3	20	78.8			
Pentachlorophenol	140	5.0	200.0	0	68.7	26.8	97.6			
Phenol	95	5.0	200.0	0	47.7	15	66.2			
1,2,4-Trichlorobenzene	61	5.0	100.0	0	61.5	15	88.2			
Surr: 2-Fluorophenol	97		200.0		48.3	15	88.8			
Surr: Phenol-d5	75		200.0		37.7	15	71.9			
Surr: 2,4,6-Tribromophenol	120		200.0		59.8	15	97.4			
Surr: Nitrobenzene-d5	61		100.0		60.8	15	117			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **lcs-58648** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **58648** RunNo: **76019**
Prep Date: **3/10/2021** Analysis Date: **3/17/2021** SeqNo: **2690920** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	60		100.0		60.4	15	100			
Surr: 4-Terphenyl-d14	88		100.0		87.6	15	120			

Sample ID: **lcsd-58648** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **58648** RunNo: **76019**
Prep Date: **3/10/2021** Analysis Date: **3/17/2021** SeqNo: **2690921** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	150	5.0	200.0	0	76.0	27.5	113	10.2	45.2	
2-Chlorophenol	170	5.0	200.0	0	84.1	17.9	103	10.3	51.8	
1,4-Dichlorobenzene	68	5.0	100.0	0	68.4	15	79.9	12.8	59.6	
2,4-Dinitrotoluene	64	5.0	100.0	0	64.3	22.9	97.2	7.68	46.5	
N-Nitrosodi-n-propylamine	75	5.0	100.0	0	74.5	34.1	104	7.01	47.7	
4-Nitrophenol	93	5.0	200.0	0	46.6	20	78.8	0.719	42.6	
Pentachlorophenol	130	5.0	200.0	0	65.7	26.8	97.6	4.42	48.7	
Phenol	110	5.0	200.0	0	53.8	15	66.2	12.0	47.1	
1,2,4-Trichlorobenzene	65	5.0	100.0	0	65.1	15	88.2	5.68	52.5	
Surr: 2-Fluorophenol	100		200.0		50.7	15	88.8	0	0	
Surr: Phenol-d5	79		200.0		39.7	15	71.9	0	0	
Surr: 2,4,6-Tribromophenol	130		200.0		65.7	15	97.4	0	0	
Surr: Nitrobenzene-d5	64		100.0		63.7	15	117	0	0	
Surr: 2-Fluorobiphenyl	60		100.0		60.4	15	100	0	0	
Surr: 4-Terphenyl-d14	86		100.0		86.3	15	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58646** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **58646** RunNo: **76103**
Prep Date: **3/10/2021** Analysis Date: **3/19/2021** SeqNo: **2694417** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthylene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.10								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.10								
Benzo(g,h,i)perylene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	2.5		4.000		63.0	26.3	112			
Surr: 2-Fluorobiphenyl	2.6		4.000		66.0	21.1	110			
Surr: 4-Terphenyl-d14	3.3		4.000		81.5	17.6	167			

Sample ID: **lcs-58646** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **58646** RunNo: **76103**
Prep Date: **3/10/2021** Analysis Date: **3/19/2021** SeqNo: **2694418** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.7	0.10	2.000	0	83.0	18.5	83.4			
1-Methylnaphthalene	1.6	0.10	2.000	0	82.0	15.1	89.6			
2-Methylnaphthalene	1.6	0.10	2.000	0	81.0	15	90.6			
Acenaphthylene	1.7	0.10	2.000	0	85.0	18.2	95.3			
Acenaphthene	1.8	0.10	2.000	0	89.0	23.9	90.3			
Fluorene	1.8	0.10	2.000	0	89.0	16.8	106			
Phenanthrene	2.0	0.10	2.000	0	99.0	23.3	105			
Anthracene	1.9	0.10	2.000	0	93.0	15	112			
Fluoranthene	2.0	0.20	2.000	0	100	15.4	138			
Pyrene	2.0	0.20	2.000	0	98.0	15	128			
Benz(a)anthracene	2.1	0.10	2.000	0	103	38.7	111			
Chrysene	2.1	0.10	2.000	0	107	32.6	96.6			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **lcs-58646** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **58646** RunNo: **76103**
Prep Date: **3/10/2021** Analysis Date: **3/19/2021** SeqNo: **2694418** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	2.0	0.10	2.000	0	101	23.8	113			
Benzo(k)fluoranthene	2.0	0.10	2.000	0	102	18.3	114			
Benzo(a)pyrene	1.9	0.070	2.000	0	97.0	24.5	123			
Dibenz(a,h)anthracene	2.0	0.10	2.000	0	101	17.8	118			
Benzo(g,h,i)perylene	2.0	0.10	2.000	0	100	22.2	110			
Indeno(1,2,3-cd)pyrene	2.3	0.30	2.000	0	114	20.8	115			
Surr: Nitrobenzene-d5	5.2		5.000		103	26.3	112			
Surr: 2-Fluorobiphenyl	5.3		5.000		106	21.1	110			
Surr: 4-Terphenyl-d14	6.3		5.000		127	17.6	167			

Sample ID: **lcsd-58646** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **58646** RunNo: **76103**
Prep Date: **3/10/2021** Analysis Date: **3/19/2021** SeqNo: **2694419** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.3	0.10	2.000	0	67.0	18.5	83.4	21.3	20	R
1-Methylnaphthalene	1.3	0.10	2.000	0	66.0	15.1	89.6	21.6	20	R
2-Methylnaphthalene	1.3	0.10	2.000	0	65.0	15	90.6	21.9	20	R
Acenaphthylene	1.4	0.10	2.000	0	68.0	18.2	95.3	22.2	20	R
Acenaphthene	1.4	0.10	2.000	0	71.0	23.9	90.3	22.5	20	R
Fluorene	1.4	0.10	2.000	0	71.0	16.8	106	22.5	20	R
Phenanthrene	1.6	0.10	2.000	0	78.0	23.3	105	23.7	20	R
Anthracene	1.5	0.10	2.000	0	74.0	15	112	22.8	20	R
Fluoranthene	2.0	0.20	2.000	0	98.0	15.4	138	2.02	20	
Pyrene	1.9	0.20	2.000	0	93.0	15	128	5.24	20	
Benz(a)anthracene	2.0	0.10	2.000	0	98.0	38.7	111	4.98	20	
Chrysene	2.0	0.10	2.000	0	99.0	32.6	96.6	7.77	20	S
Benzo(b)fluoranthene	1.9	0.10	2.000	0	97.0	23.8	113	4.04	20	
Benzo(k)fluoranthene	1.9	0.10	2.000	0	96.0	18.3	114	6.06	20	
Benzo(a)pyrene	1.8	0.070	2.000	0	91.0	24.5	123	6.38	20	
Dibenz(a,h)anthracene	1.9	0.10	2.000	0	94.0	17.8	118	7.18	20	
Benzo(g,h,i)perylene	1.9	0.10	2.000	0	94.0	22.2	110	6.19	20	
Indeno(1,2,3-cd)pyrene	2.1	0.30	2.000	0	106	20.8	115	7.27	20	
Surr: Nitrobenzene-d5	4.1		5.000		82.4	26.3	112	0	0	
Surr: 2-Fluorobiphenyl	4.2		5.000		83.6	21.1	110	0	0	
Surr: 4-Terphenyl-d14	5.8		5.000		115	17.6	167	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **B75890** RunNo: **75890**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685236** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	97.1	70	130			
Surr: BFB	10		10.00		103	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **B75890** RunNo: **75890**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685255** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.022	0.050								J
Surr: BFB	10		10.00		100	70	130			

Sample ID: **2.5ng gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **B76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690821** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.4	70	130			
Surr: BFB	9.8		10.00		97.5	70	130			

Sample ID: **2103470-009a ms** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB 3/9/2021** Batch ID: **B76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690830** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.41	0.050	0.5000	0.02000	77.9	70	130			
Surr: BFB	9.4		10.00		94.5	70	130			

Sample ID: **2103470-009a msd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **EB 3/9/2021** Batch ID: **B76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690831** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0.02000	92.6	70	130	16.5	20	
Surr: BFB	9.9		10.00		99.2	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **B76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690848** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103470**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBW**	Batch ID: **B76015**	RunNo: **76015**							
Prep Date:	Analysis Date: **3/17/2021**	SeqNo: **2690848**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.017	0.050								J
Surr: BFB	9.5		10.00		94.9	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSW**	Batch ID: **B76055**	RunNo: **76055**							
Prep Date:	Analysis Date: **3/18/2021**	SeqNo: **2692208**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	88.7	70	130			
Surr: BFB	9.8		10.00		97.6	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBW**	Batch ID: **B76055**	RunNo: **76055**							
Prep Date:	Analysis Date: **3/18/2021**	SeqNo: **2692241**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.017	0.050								J
Surr: BFB	9.5		10.00		95.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2103470 | RcptNo: 1

Received By: **Desiree Dominguez** 3/9/2021 4:20:00 PM DD

Completed By: **Erin Melendrez** 3/9/2021 4:41:37 PM

Reviewed By: JR 3/10/21

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 24, 1
(<2 or >12 unless noted)
Adjusted? NO
Checked by: IO 3/10/21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date: ____
By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: ____
Client Instructions: ____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.6	Good				
2	3.4	Good				
3	4.1	Good				

Released to Imaging: 11/23/2022 10:23:25 AM
Received by OCD: 3/25/2022 3:35:30 PM

Chain of Custody Record

Client: Marathon Petroleum Company

Mailing Address: 92 Giant Crossing Rd.
Jamestown, NM 87347

Phone #: 808-640-1823

Email or Fax#: bmcloughlin@trihydro.com

QA/QC Package:
Standard ☒ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
NELAC ☐ Other

EDD (Type)

☒ Standard ☐ Rush

Project Name:
2021 GW Sampling - 1st Quarter

Project #:
697-080-001

Project Manager:
Brian McLoughlin

Sampler:

On Ice: ☒ Yes ☐ No

# of Coolers: 3.

Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2103470	8260 BTEX/MTBE VOCs	TPH GRO	TPH DRO/MRO	SVOC includes 1,4 Dioxane on request	1,4 Dioxane only	WQCC metals	C/A	NO2/NO3 combined	Nitrite	8011 EDB	BOD	300 BTEX + MTBE	Cyanide	TDS/TSS	Gen Chem	PFAS
3/9	8:20	water	MKTF-24			-001	X	X	X	X		X	X			X*						
3/9	9:15	water	OAPIS-1			-002	X	X	X	X		X	X			X			X			
3/9	9:45	water	MKTF-29			-003	X	X	X	X		X	X									
3/9	11:20	water	MKTF-30			-004	X	X	X	X		X	X			X						
3/9	12:00	water	KA-3			-005		X	X	X		X	X					X				
3/9	12:20	water	NAPIS-3			-006		X	X	X		X	X			X		X				
3/9	11:20	water	FB 3/9/2021			-007	X															
3/9	—	water	DUP 3/9/2021			-008	X	X	X	X		X	X			X						
3/9	9:45	water	EB 3/9/2021			-009	X	X	X	X		X	X									
		water																				
		water	TB			-010																
		water																				

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
3/9	13:30			Courier	3/9/21	16:20
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks: ① 3.6 CF = 3.6°C
② 3.4 -0.1 = 3.4°C
③ 4.1 " " 4.1°C
*Per sample plan - ENM 3/9/21

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

April 08, 2021

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX

RE: 2021 GW Sampling 1st Quarter OrderNo.: 2103532

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 14 sample(s) on 3/10/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Case Narrative

WO#: **2103532**
Date: **4/8/2021**

CLIENT: Marathon
Project: 2021 GW Sampling 1st Quarter

Analytical Notes Regarding EPA Method 8015D:
The samples listed below had a single contaminant peak that was identified in the QC and the samples listed below. The contaminant peak was manually removed from the summation of the diesel range organcis results. The concentration of the contaminant peak, in the samples that was removed, is listed next to the sample name: NAPIS-2 (0.15mg/L), STP-1 NW (0.16mg/L), MKTF-50 0.1mg/L), MKTF-11 (0.22mg/L), MKTF-02 (0.6mg/L), West LDU (0.1mg/L), STP-EP (0.98mg/L), Dup 3-10-21 (0.01mg/L), LCS 58742 (0.07mg/L), LCSD 58742 (0.02mg/L), LCS 58760 (0.04mg/L), LCSD 58760 (0.01mg/L). We are researching the source of the contamination to prevent this peak from appearing in the future.

Analytical Notes Regarding EPA Method 504.1:
Sample EB 3-10-21 was preserved with HCL.

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:10:00 PM
Lab ID: 2103532-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: **BRM**	
Benzene	200	2.3	10		µg/L	10	3/17/2021 8:16:23 PM	C76015
Toluene	ND	2.0	10		µg/L	10	3/17/2021 8:16:23 PM	C76015
Ethylbenzene	31	2.1	10		µg/L	10	3/17/2021 8:16:23 PM	C76015
Methyl tert-butyl ether (MTBE)	77	3.9	10		µg/L	10	3/17/2021 8:16:23 PM	C76015
Xylenes, Total	ND	5.5	15		µg/L	10	3/17/2021 8:16:23 PM	C76015
Surr: 1,2-Dichloroethane-d4	89.9	0	70-130		%Rec	10	3/17/2021 8:16:23 PM	C76015
Surr: 4-Bromofluorobenzene	88.2	0	70-130		%Rec	10	3/17/2021 8:16:23 PM	C76015
Surr: Dibromofluoromethane	89.9	0	70-130		%Rec	10	3/17/2021 8:16:23 PM	C76015
Surr: Toluene-d8	86.4	0	70-130		%Rec	10	3/17/2021 8:16:23 PM	C76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	1.2	0.080	0.50		mg/L	10	3/17/2021 8:16:23 PM	B76015
Surr: BFB	99.3	0	70-130		%Rec	10	3/17/2021 8:16:23 PM	B76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:10:00 PM
Lab ID: 2103532-001B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.76	0.075	0.085		mg/L	1	3/23/2021 3:59:26 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 3:59:26 PM	58742
Surr: DNOP	94.5	0	45.1-141		%Rec	1	3/23/2021 3:59:26 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:10:00 PM
Lab ID: 2103532-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Azobenzene	ND	0.55	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Benzoic acid	ND	1.1	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Bis(2-ethylhexyl)phthalate	10	4.5	10		µg/L	1	3/17/2021 10:09:22 PM	58720
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Carbazole	ND	0.56	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Di-n-butyl phthalate	7.1	6.5	10	J	µg/L	1	3/17/2021 10:09:22 PM	58720
Di-n-octyl phthalate	9.1	3.1	10	J	µg/L	1	3/17/2021 10:09:22 PM	58720
Dibenzofuran	2.2	0.38	5.0	J	µg/L	1	3/17/2021 10:09:22 PM	58720
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2021 10:09:22 PM	58720
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2021 10:09:22 PM	58720
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Isophorone	ND	0.40	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:10:00 PM
Lab ID: 2103532-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Phenol	14	0.33	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Pyridine	ND	0.93	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2021 10:09:22 PM	58720
Surr: 2-Fluorophenol	45.6	0	15-88.8		%Rec	1	3/17/2021 10:09:22 PM	58720
Surr: Phenol-d5	35.9	0	15-71.9		%Rec	1	3/17/2021 10:09:22 PM	58720
Surr: 2,4,6-Tribromophenol	70.8	0	15-97.4		%Rec	1	3/17/2021 10:09:22 PM	58720
Surr: Nitrobenzene-d5	54.0	0	15-117		%Rec	1	3/17/2021 10:09:22 PM	58720
Surr: 2-Fluorobiphenyl	50.6	0	15-100		%Rec	1	3/17/2021 10:09:22 PM	58720
Surr: 4-Terphenyl-d14	84.1	0	15-120		%Rec	1	3/17/2021 10:09:22 PM	58720
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	3.1	0.034	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
1-Methylnaphthalene	3.6	0.024	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
Acenaphthene	2.3	0.031	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
Fluorene	0.46	0.031	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
Phenanthrene	ND	0.057	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
Anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
Fluoranthene	ND	0.10	0.20		µg/L	1	3/19/2021 3:36:00 PM	58709
Pyrene	ND	0.16	0.20		µg/L	1	3/19/2021 3:36:00 PM	58709
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
Chrysene	ND	0.024	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/19/2021 3:36:00 PM	58709
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/19/2021 3:36:00 PM	58709
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/19/2021 3:36:00 PM	58709
Surr: Nitrobenzene-d5	88.0	0	26.3-112		%Rec	1	3/19/2021 3:36:00 PM	58709
Surr: 2-Fluorobiphenyl	81.5	0	21.1-110		%Rec	1	3/19/2021 3:36:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:10:00 PM
Lab ID: 2103532-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	93.0	0	17.6-167		%Rec	1	3/19/2021 3:36:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:10:00 PM
Lab ID: 2103532-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	1.9	0.22	0.50		mg/L	5	3/10/2021 11:59:04 PM	A75861
Chloride	200	5.0	10		mg/L	20	3/11/2021 12:11:56 AM	A75861
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/10/2021 11:59:04 PM	A75861
Bromide	1.1	0.25	0.50		mg/L	5	3/10/2021 11:59:04 PM	A75861
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	3/10/2021 11:59:04 PM	A75861
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/10/2021 11:59:04 PM	A75861
Sulfate	1.9	1.2	2.5	J	mg/L	5	3/10/2021 11:59:04 PM	A75861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:10:00 PM
Lab ID: 2103532-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 10:15:21 AM	A75995
Barium	2.8	0.0056	0.010	*	mg/L	5	3/17/2021 10:16:56 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 10:15:21 AM	A75995
Boron	0.42	0.0067	0.040		mg/L	1	3/17/2021 10:15:21 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 10:15:21 AM	A75995
Calcium	72	0.11	1.0		mg/L	1	3/17/2021 10:15:21 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 10:15:21 AM	A75995
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2021 10:15:21 AM	A75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 10:15:21 AM	A75995
Iron	0.37	0.010	0.020	*	mg/L	1	3/17/2021 10:15:21 AM	A75995
Magnesium	13	0.067	1.0		mg/L	1	3/17/2021 10:15:21 AM	A75995
Manganese	0.81	0.00058	0.0020	*	mg/L	1	3/17/2021 10:15:21 AM	A75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 10:15:21 AM	A75995
Nickel	0.012	0.0033	0.010		mg/L	1	3/17/2021 10:15:21 AM	A75995
Potassium	0.22	0.16	1.0	J	mg/L	1	3/17/2021 10:15:21 AM	A75995
Silver	0.0013	0.0013	0.0050	J	mg/L	1	3/17/2021 10:15:21 AM	A75995
Sodium	280	0.69	5.0		mg/L	5	3/17/2021 10:16:56 AM	A75995
Zinc	0.015	0.0060	0.010		mg/L	1	3/17/2021 10:15:21 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 3:34:59 PM	A75953
Arsenic	0.0015	0.00021	0.0010		mg/L	1	3/15/2021 3:34:59 PM	A75953
Lead	0.00012	0.000034	0.00050	J	mg/L	1	3/15/2021 3:34:59 PM	A75953
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 3:34:59 PM	A75953
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 3:34:59 PM	A75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 2:57:50 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: NAPIS-2
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:10:00 PM
Lab ID: 2103532-001F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	2.8	0.037	0.10	*	mg/L	5	3/14/2021 9:44:37 AM	58685
Barium	2.8	0.0082	0.015	*	mg/L	5	3/14/2021 9:44:37 AM	58685
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 9:43:16 AM	58685
Boron	0.41	0.0074	0.040		mg/L	1	3/14/2021 9:43:16 AM	58685
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 9:43:16 AM	58685
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 9:43:16 AM	58685
Cobalt	0.0026	0.0024	0.0060	J	mg/L	1	3/14/2021 9:43:16 AM	58685
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 9:43:16 AM	58685
Iron	2.3	0.064	0.25	*	mg/L	5	3/14/2021 9:44:37 AM	58685
Manganese	0.82	0.00081	0.0020	*	mg/L	1	3/14/2021 9:43:16 AM	58685
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 9:43:16 AM	58685
Nickel	0.012	0.0033	0.010		mg/L	1	3/14/2021 9:43:16 AM	58685
Silver	0.0020	0.0013	0.0050	J	mg/L	1	3/14/2021 9:43:16 AM	58685
Zinc	ND	0.0064	0.010		mg/L	1	3/14/2021 9:43:16 AM	58685
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 11:56:01 AM	58685
Arsenic	0.0028	0.00026	0.0010		mg/L	1	3/15/2021 11:56:01 AM	58685
Lead	0.0015	0.000034	0.00050		mg/L	1	3/15/2021 11:56:01 AM	58685
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 11:56:01 AM	58685
Thallium	ND	0.00025	0.00025		mg/L	1	3/15/2021 11:56:01 AM	58685
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:14:14 PM	58746

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:30:00 PM
Lab ID: 2103532-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Toluene	ND	0.20	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Methyl tert-butyl ether (MTBE)	0.41	0.39	1.0	J	µg/L	1	3/17/2021 8:43:20 PM	A76015
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Naphthalene	ND	0.28	2.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Acetone	ND	2.3	10		µg/L	1	3/17/2021 8:43:20 PM	A76015
Bromobenzene	ND	0.28	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Bromoform	ND	0.31	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Bromomethane	ND	1.6	3.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
2-Butanone	ND	1.1	10		µg/L	1	3/17/2021 8:43:20 PM	A76015
Carbon disulfide	ND	0.44	10		µg/L	1	3/17/2021 8:43:20 PM	A76015
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Chloroethane	ND	0.38	2.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Chloroform	ND	0.13	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Chloromethane	ND	0.40	3.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Dibromomethane	ND	0.31	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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D	Sample Diluted Due to Matrix
E	Value above quantitation range
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ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:30:00 PM
Lab ID: 2103532-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
2-Hexanone	ND	1.8	10		µg/L	1	3/17/2021 8:43:20 PM	A76015
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/17/2021 8:43:20 PM	A76015
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Styrene	ND	0.13	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/17/2021 8:43:20 PM	A76015
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/17/2021 8:43:20 PM	A76015
Surr: 1,2-Dichloroethane-d4	94.6	0	70-130		%Rec	1	3/17/2021 8:43:20 PM	A76015
Surr: 4-Bromofluorobenzene	82.9	0	70-130		%Rec	1	3/17/2021 8:43:20 PM	A76015
Surr: Dibromofluoromethane	94.5	0	70-130		%Rec	1	3/17/2021 8:43:20 PM	A76015
Surr: Toluene-d8	79.9	0	70-130		%Rec	1	3/17/2021 8:43:20 PM	A76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.016	0.0080	0.050	J	mg/L	1	3/17/2021 8:43:20 PM	B76015
Surr: BFB	90.2	0	70-130		%Rec	1	3/17/2021 8:43:20 PM	B76015

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:30:00 PM
Lab ID: 2103532-002B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.11	0.075	0.085		mg/L	1	3/23/2021 4:23:23 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 4:23:23 PM	58742
Surr: DNOP	91.9	0	45.1-141		%Rec	1	3/23/2021 4:23:23 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:30:00 PM
Lab ID: 2103532-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Azobenzene	ND	0.55	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Benzoic acid	ND	1.1	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Bis(2-ethylhexyl)phthalate	7.4	4.5	10	J	µg/L	1	3/17/2021 10:50:06 PM	58720
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Carbazole	ND	0.56	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Di-n-butyl phthalate	6.8	6.5	10	J	µg/L	1	3/17/2021 10:50:06 PM	58720
Di-n-octyl phthalate	9.1	3.1	10	J	µg/L	1	3/17/2021 10:50:06 PM	58720
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2021 10:50:06 PM	58720
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2021 10:50:06 PM	58720
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Isophorone	ND	0.40	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:30:00 PM
Lab ID: 2103532-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Phenol	ND	0.33	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Pyridine	ND	0.93	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2021 10:50:06 PM	58720
Surr: 2-Fluorophenol	57.7	0	15-88.8		%Rec	1	3/17/2021 10:50:06 PM	58720
Surr: Phenol-d5	45.6	0	15-71.9		%Rec	1	3/17/2021 10:50:06 PM	58720
Surr: 2,4,6-Tribromophenol	78.8	0	15-97.4		%Rec	1	3/17/2021 10:50:06 PM	58720
Surr: Nitrobenzene-d5	63.6	0	15-117		%Rec	1	3/17/2021 10:50:06 PM	58720
Surr: 2-Fluorobiphenyl	63.5	0	15-100		%Rec	1	3/17/2021 10:50:06 PM	58720
Surr: 4-Terphenyl-d14	98.8	0	15-120		%Rec	1	3/17/2021 10:50:06 PM	58720
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
Acenaphthene	ND	0.031	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
Fluorene	ND	0.031	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
Phenanthrene	ND	0.057	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
Anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
Fluoranthene	ND	0.10	0.20		µg/L	1	3/19/2021 4:21:00 PM	58709
Pyrene	ND	0.16	0.20		µg/L	1	3/19/2021 4:21:00 PM	58709
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
Chrysene	ND	0.024	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/19/2021 4:21:00 PM	58709
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/19/2021 4:21:00 PM	58709
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/19/2021 4:21:00 PM	58709
Surr: Nitrobenzene-d5	66.5	0	26.3-112		%Rec	1	3/19/2021 4:21:00 PM	58709
Surr: 2-Fluorobiphenyl	54.5	0	21.1-110		%Rec	1	3/19/2021 4:21:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:30:00 PM
Lab ID: 2103532-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	80.0	0	17.6-167		%Rec	1	3/19/2021 4:21:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:30:00 PM
Lab ID: 2103532-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.12	0.043	0.10		mg/L	1	3/11/2021 12:24:48 AM	A75861
Chloride	2000	50	100	*	mg/L	200	3/11/2021 4:54:33 PM	R75889
Nitrogen, Nitrite (As N)	ND	0.28	2.0		mg/L	20	3/11/2021 12:37:40 AM	A75861
Bromide	3.8	0.050	0.10		mg/L	1	3/11/2021 12:24:48 AM	A75861
Nitrogen, Nitrate (As N)	23	0.40	2.0	*	mg/L	20	3/11/2021 12:37:40 AM	A75861
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	3/11/2021 12:24:48 AM	A75861
Sulfate	150	5.0	10		mg/L	20	3/11/2021 12:37:40 AM	A75861

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:30:00 PM
Lab ID: 2103532-002E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 10:18:30 AM	A75995
Barium	0.094	0.0011	0.0020		mg/L	1	3/17/2021 10:18:30 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 10:18:30 AM	A75995
Boron	2.3	0.033	0.20		mg/L	5	3/17/2021 10:20:05 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 10:18:30 AM	A75995
Calcium	82	0.11	1.0		mg/L	1	3/17/2021 10:18:30 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 10:18:30 AM	A75995
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2021 10:18:30 AM	A75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 10:18:30 AM	A75995
Iron	0.032	0.010	0.020		mg/L	1	3/17/2021 10:18:30 AM	A75995
Magnesium	11	0.067	1.0		mg/L	1	3/17/2021 10:18:30 AM	A75995
Manganese	0.00059	0.00058	0.0020	J	mg/L	1	3/17/2021 10:18:30 AM	A75995
Molybdenum	0.016	0.0056	0.0080		mg/L	1	3/17/2021 10:18:30 AM	A75995
Nickel	ND	0.0033	0.010		mg/L	1	3/17/2021 10:18:30 AM	A75995
Potassium	5.1	0.16	1.0		mg/L	1	3/17/2021 10:18:30 AM	A75995
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2021 10:18:30 AM	A75995
Sodium	1500	2.7	20		mg/L	20	3/17/2021 11:25:48 AM	A75995
Zinc	0.021	0.0060	0.010		mg/L	1	3/17/2021 10:18:30 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/15/2021 6:42:16 PM	A75953
Arsenic	0.0025	0.0010	0.0050	J	mg/L	5	3/15/2021 6:42:16 PM	A75953
Lead	ND	0.00017	0.0025		mg/L	5	3/15/2021 6:42:16 PM	A75953
Selenium	0.0059	0.0033	0.0050		mg/L	5	3/15/2021 6:42:16 PM	A75953
Thallium	ND	0.00017	0.0025		mg/L	5	3/15/2021 6:42:16 PM	A75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:05:08 PM	58800

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-1-NW
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:30:00 PM
Lab ID: 2103532-002F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	1.8	0.037	0.10	*	mg/L	5	3/14/2021 9:50:12 AM	58685
Barium	0.13	0.0016	0.0030		mg/L	1	3/14/2021 9:46:14 AM	58685
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 9:46:14 AM	58685
Boron	2.4	0.037	0.20		mg/L	5	3/14/2021 9:50:12 AM	58685
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 9:46:14 AM	58685
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 9:46:14 AM	58685
Cobalt	0.0056	0.0024	0.0060	J	mg/L	1	3/14/2021 9:46:14 AM	58685
Copper	0.0055	0.0047	0.0060	J	mg/L	1	3/14/2021 9:46:14 AM	58685
Iron	1.7	0.064	0.25	*	mg/L	5	3/14/2021 9:50:12 AM	58685
Manganese	0.052	0.00081	0.0020	*	mg/L	1	3/14/2021 9:46:14 AM	58685
Molybdenum	0.017	0.0065	0.0080		mg/L	1	3/14/2021 9:46:14 AM	58685
Nickel	ND	0.0033	0.010		mg/L	1	3/14/2021 9:46:14 AM	58685
Silver	0.0023	0.0013	0.0050	J	mg/L	1	3/14/2021 9:46:14 AM	58685
Zinc	0.022	0.0064	0.010		mg/L	1	3/14/2021 9:46:14 AM	58685
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 11:58:25 AM	58685
Arsenic	0.0026	0.0013	0.0050	J	mg/L	5	3/15/2021 1:00:23 PM	58685
Lead	0.0014	0.00017	0.0025	J	mg/L	5	3/15/2021 1:00:23 PM	58685
Selenium	0.0067	0.0033	0.0050		mg/L	5	3/15/2021 1:00:23 PM	58685
Thallium	ND	0.0012	0.0012		mg/L	5	3/15/2021 1:00:23 PM	58685
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:16:40 PM	58746

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-50
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:55:00 PM
Lab ID: 2103532-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	1400	23	100		µg/L	100	3/17/2021 9:10:21 PM	A76015
Toluene	35	2.0	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Ethylbenzene	890	2.1	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Methyl tert-butyl ether (MTBE)	42	3.9	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,2,4-Trimethylbenzene	120	1.2	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,3,5-Trimethylbenzene	39	1.8	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,2-Dichloroethane (EDC)	ND	2.2	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Naphthalene	98	2.8	20		µg/L	10	3/18/2021 12:37:45 PM	A76055
1-Methylnaphthalene	60	8.4	40		µg/L	10	3/18/2021 12:37:45 PM	A76055
2-Methylnaphthalene	53	6.9	40		µg/L	10	3/18/2021 12:37:45 PM	A76055
Acetone	ND	23	100		µg/L	10	3/18/2021 12:37:45 PM	A76055
Bromobenzene	ND	2.8	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Bromodichloromethane	ND	2.0	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Bromoform	ND	3.1	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Bromomethane	ND	16	30		µg/L	10	3/18/2021 12:37:45 PM	A76055
2-Butanone	ND	11	100		µg/L	10	3/18/2021 12:37:45 PM	A76055
Carbon disulfide	ND	4.4	100		µg/L	10	3/18/2021 12:37:45 PM	A76055
Carbon Tetrachloride	ND	1.8	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Chlorobenzene	ND	1.4	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Chloroethane	ND	3.8	20		µg/L	10	3/18/2021 12:37:45 PM	A76055
Chloroform	ND	1.3	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Chloromethane	ND	4.0	30		µg/L	10	3/18/2021 12:37:45 PM	A76055
2-Chlorotoluene	ND	1.3	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
4-Chlorotoluene	ND	5.1	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
cis-1,2-DCE	ND	3.9	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	3/18/2021 12:37:45 PM	A76055
Dibromochloromethane	ND	2.8	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Dibromomethane	ND	3.1	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Dichlorodifluoromethane	ND	4.4	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,1-Dichloroethane	ND	2.7	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,1-Dichloroethene	ND	1.3	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,2-Dichloropropane	ND	1.3	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,3-Dichloropropane	ND	1.8	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
2,2-Dichloropropane	ND	2.6	20		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,1-Dichloropropene	ND	1.8	10		µg/L	10	3/18/2021 12:37:45 PM	A76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-50
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:55:00 PM
Lab ID: 2103532-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	3.3	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
2-Hexanone	ND	18	100		µg/L	10	3/18/2021 12:37:45 PM	A76055
Isopropylbenzene	74	1.8	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
4-Isopropyltoluene	3.9	2.0	10	J	µg/L	10	3/18/2021 12:37:45 PM	A76055
4-Methyl-2-pentanone	ND	11	100		µg/L	10	3/18/2021 12:37:45 PM	A76055
Methylene Chloride	ND	4.0	30		µg/L	10	3/18/2021 12:37:45 PM	A76055
n-Butylbenzene	15	2.5	30	J	µg/L	10	3/18/2021 12:37:45 PM	A76055
n-Propylbenzene	120	1.8	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
sec-Butylbenzene	12	6.1	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Styrene	ND	1.3	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
tert-Butylbenzene	ND	2.4	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	3/18/2021 12:37:45 PM	A76055
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
trans-1,2-DCE	ND	4.9	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,2,3-Trichlorobenzene	ND	1.3	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,1,2-Trichloroethane	ND	1.9	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Trichlorofluoromethane	ND	0.92	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	3/18/2021 12:37:45 PM	A76055
Vinyl chloride	ND	2.0	10		µg/L	10	3/18/2021 12:37:45 PM	A76055
Xylenes, Total	560	5.5	15		µg/L	10	3/18/2021 12:37:45 PM	A76055
Surr: 1,2-Dichloroethane-d4	83.7	0	70-130		%Rec	10	3/18/2021 12:37:45 PM	A76055
Surr: 4-Bromofluorobenzene	89.2	0	70-130		%Rec	10	3/18/2021 12:37:45 PM	A76055
Surr: Dibromofluoromethane	80.0	0	70-130		%Rec	10	3/18/2021 12:37:45 PM	A76055
Surr: Toluene-d8	85.9	0	70-130		%Rec	10	3/18/2021 12:37:45 PM	A76055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	21	0.080	0.50		mg/L	10	3/18/2021 12:37:45 PM	B76055
Surr: BFB	98.7	0	70-130		%Rec	10	3/18/2021 12:37:45 PM	B76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-50
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:55:00 PM
Lab ID: 2103532-003B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	2.5	0.075	0.085		mg/L	1	3/23/2021 4:47:19 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 4:47:19 PM	58742
Surr: DNOP	90.1	0	45.1-141		%Rec	1	3/23/2021 4:47:19 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-50
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:55:00 PM
Lab ID: 2103532-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Azobenzene	ND	0.55	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Benzoic acid	ND	1.1	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Bis(2-ethylhexyl)phthalate	8.8	4.5	10	J	µg/L	1	3/17/2021 11:31:25 PM	58720
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Carbazole	5.6	0.56	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Di-n-butyl phthalate	8.3	6.5	10	J	µg/L	1	3/17/2021 11:31:25 PM	58720
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/17/2021 11:31:25 PM	58720
Dibenzofuran	3.1	0.38	5.0	J	µg/L	1	3/17/2021 11:31:25 PM	58720
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Diethyl phthalate	ND	3.9	10		µg/L	1	3/17/2021 11:31:25 PM	58720
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/17/2021 11:31:25 PM	58720
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Isophorone	ND	0.40	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-50
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:55:00 PM
Lab ID: 2103532-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Phenol	8.3	0.33	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Pyridine	ND	0.93	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/17/2021 11:31:25 PM	58720
Surr: 2-Fluorophenol	0	0	15-88.8	S	%Rec	1	3/17/2021 11:31:25 PM	58720
Surr: Phenol-d5	37.4	0	15-71.9		%Rec	1	3/17/2021 11:31:25 PM	58720
Surr: 2,4,6-Tribromophenol	73.2	0	15-97.4		%Rec	1	3/17/2021 11:31:25 PM	58720
Surr: Nitrobenzene-d5	51.3	0	15-117		%Rec	1	3/17/2021 11:31:25 PM	58720
Surr: 2-Fluorobiphenyl	54.2	0	15-100		%Rec	1	3/17/2021 11:31:25 PM	58720
Surr: 4-Terphenyl-d14	89.4	0	15-120		%Rec	1	3/17/2021 11:31:25 PM	58720
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	2.4	50	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Naphthalene	71	1.7	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
1-Methylnaphthalene	41	1.2	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
2-Methylnaphthalene	39	1.7	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Acenaphthylene	ND	2.2	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Acenaphthene	ND	1.5	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Fluorene	7.0	1.5	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Phenanthrene	ND	2.8	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Anthracene	ND	1.7	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Fluoranthene	ND	5.0	10	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Pyrene	ND	8.0	10	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Benz(a)anthracene	ND	1.8	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Chrysene	ND	1.2	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Benzo(b)fluoranthene	ND	2.8	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Benzo(k)fluoranthene	ND	1.8	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Benzo(a)pyrene	ND	1.7	3.5	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Dibenz(a,h)anthracene	ND	1.7	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Benzo(g,h,i)perylene	ND	1.7	5.0	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Indeno(1,2,3-cd)pyrene	ND	2.2	15	D	µg/L	50	3/19/2021 6:05:00 PM	58709
Surr: Nitrobenzene-d5	0	0	26.3-112	SD	%Rec	50	3/19/2021 6:05:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-50
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:55:00 PM
Lab ID: 2103532-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 2-Fluorobiphenyl	0	0	21.1-110	SD	%Rec	50	3/19/2021 6:05:00 PM	58709
Surr: 4-Terphenyl-d14	0	0	17.6-167	SD	%Rec	50	3/19/2021 6:05:00 PM	58709

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-50
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:55:00 PM
Lab ID: 2103532-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	3.1	0.22	0.50		mg/L	5	3/11/2021 12:50:34 AM	A75861
Chloride	760	25	50	*	mg/L	100	3/11/2021 5:07:25 PM	R75889
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/11/2021 12:50:34 AM	A75861
Bromide	1.8	0.25	0.50		mg/L	5	3/11/2021 12:50:34 AM	A75861
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	3/11/2021 12:50:34 AM	A75861
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/11/2021 12:50:34 AM	A75861
Sulfate	4.7	1.2	2.5		mg/L	5	3/11/2021 12:50:34 AM	A75861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-50
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:55:00 PM
Lab ID: 2103532-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 10:26:10 AM	A75995
Barium	3.7	0.0056	0.010	*	mg/L	5	3/17/2021 10:27:34 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 10:26:10 AM	A75995
Boron	0.87	0.0067	0.040		mg/L	1	3/17/2021 10:26:10 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 10:26:10 AM	A75995
Calcium	130	0.57	5.0		mg/L	5	3/17/2021 10:27:34 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 10:26:10 AM	A75995
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2021 10:26:10 AM	A75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 10:26:10 AM	A75995
Iron	1.7	0.052	0.10	*	mg/L	5	3/17/2021 10:27:34 AM	A75995
Magnesium	35	0.067	1.0		mg/L	1	3/17/2021 10:26:10 AM	A75995
Manganese	2.2	0.0029	0.010	*	mg/L	5	3/17/2021 10:27:34 AM	A75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 10:26:10 AM	A75995
Nickel	0.011	0.0033	0.010		mg/L	1	3/17/2021 10:26:10 AM	A75995
Potassium	2.4	0.16	1.0		mg/L	1	3/17/2021 10:26:10 AM	A75995
Silver	0.0019	0.0013	0.0050	J	mg/L	1	3/17/2021 10:26:10 AM	A75995
Sodium	650	1.4	10		mg/L	10	3/17/2021 11:27:19 AM	A75995
Zinc	0.0062	0.0060	0.010	J	mg/L	1	3/17/2021 10:26:10 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 3:47:19 PM	A75953
Arsenic	0.0017	0.0010	0.0050	J	mg/L	5	3/15/2021 6:44:58 PM	A75953
Lead	ND	0.000034	0.00050		mg/L	1	3/15/2021 3:47:19 PM	A75953
Selenium	ND	0.0033	0.0050		mg/L	5	3/15/2021 6:44:58 PM	A75953
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 3:47:19 PM	A75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:07:31 PM	58800

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-50
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 2:55:00 PM
Lab ID: 2103532-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.57	0.037	0.10	*	mg/L	5	3/14/2021 10:03:48 AM	58685
Barium	3.3	0.0082	0.015	*	mg/L	5	3/14/2021 10:03:48 AM	58685
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 9:59:49 AM	58685
Boron	0.98	0.037	0.20		mg/L	5	3/14/2021 10:03:48 AM	58685
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 9:59:49 AM	58685
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 9:59:49 AM	58685
Cobalt	0.0054	0.0024	0.0060	J	mg/L	1	3/14/2021 9:59:49 AM	58685
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 9:59:49 AM	58685
Iron	2.0	0.064	0.25	*	mg/L	5	3/14/2021 10:03:48 AM	58685
Manganese	2.5	0.0041	0.010	*	mg/L	5	3/14/2021 10:03:48 AM	58685
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 9:59:49 AM	58685
Nickel	0.0083	0.0033	0.010	J	mg/L	1	3/14/2021 9:59:49 AM	58685
Silver	0.0035	0.0013	0.0050	J	mg/L	1	3/14/2021 9:59:49 AM	58685
Zinc	ND	0.0064	0.010		mg/L	1	3/14/2021 9:59:49 AM	58685
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 12:03:13 PM	58685
Arsenic	0.0014	0.00026	0.0010		mg/L	1	3/15/2021 12:03:13 PM	58685
Lead	0.00024	0.000034	0.00050	J	mg/L	1	3/15/2021 12:03:13 PM	58685
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 12:03:13 PM	58685
Thallium	ND	0.00025	0.00025		mg/L	1	3/15/2021 12:03:13 PM	58685
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:19:03 PM	58746

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-49
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 3:10:00 PM
Lab ID: 2103532-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	18000	45	200		µg/L	200	3/18/2021 1:05:05 PM	A76055
Toluene	7900	40	200		µg/L	200	3/18/2021 1:05:05 PM	A76055
Ethylbenzene	1200	4.3	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Methyl tert-butyl ether (MTBE)	14	7.9	20	J	µg/L	20	3/17/2021 9:37:27 PM	A76015
1,2,4-Trimethylbenzene	590	2.4	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,3,5-Trimethylbenzene	180	3.6	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,2-Dichloroethane (EDC)	ND	4.4	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,2-Dibromoethane (EDB)	ND	6.1	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Naphthalene	46	5.6	40		µg/L	20	3/17/2021 9:37:27 PM	A76015
1-Methylnaphthalene	ND	17	80		µg/L	20	3/17/2021 9:37:27 PM	A76015
2-Methylnaphthalene	ND	14	80		µg/L	20	3/17/2021 9:37:27 PM	A76015
Acetone	ND	47	200		µg/L	20	3/17/2021 9:37:27 PM	A76015
Bromobenzene	ND	5.7	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Bromodichloromethane	ND	4.1	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Bromoform	ND	6.3	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Bromomethane	ND	31	60		µg/L	20	3/17/2021 9:37:27 PM	A76015
2-Butanone	ND	22	200		µg/L	20	3/17/2021 9:37:27 PM	A76015
Carbon disulfide	ND	8.9	200		µg/L	20	3/17/2021 9:37:27 PM	A76015
Carbon Tetrachloride	ND	3.5	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Chlorobenzene	ND	2.7	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Chloroethane	ND	7.5	40		µg/L	20	3/17/2021 9:37:27 PM	A76015
Chloroform	ND	2.7	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Chloromethane	ND	8.0	60		µg/L	20	3/17/2021 9:37:27 PM	A76015
2-Chlorotoluene	ND	2.6	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
4-Chlorotoluene	ND	10	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
cis-1,2-DCE	ND	7.8	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
cis-1,3-Dichloropropene	ND	7.2	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,2-Dibromo-3-chloropropane	ND	12	40		µg/L	20	3/17/2021 9:37:27 PM	A76015
Dibromochloromethane	ND	5.7	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Dibromomethane	ND	6.2	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,2-Dichlorobenzene	ND	3.1	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,3-Dichlorobenzene	ND	3.2	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,4-Dichlorobenzene	ND	4.2	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Dichlorodifluoromethane	ND	8.8	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,1-Dichloroethane	ND	5.5	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,1-Dichloroethene	ND	2.6	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,2-Dichloropropane	ND	2.7	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,3-Dichloropropane	ND	3.6	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
2,2-Dichloropropane	ND	5.2	40		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,1-Dichloropropene	ND	3.6	20		µg/L	20	3/17/2021 9:37:27 PM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-49
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 3:10:00 PM
Lab ID: 2103532-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	6.6	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
2-Hexanone	ND	36	200		µg/L	20	3/17/2021 9:37:27 PM	A76015
Isopropylbenzene	110	3.7	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
4-Isopropyltoluene	9.6	4.0	20	J	µg/L	20	3/17/2021 9:37:27 PM	A76015
4-Methyl-2-pentanone	ND	23	200		µg/L	20	3/17/2021 9:37:27 PM	A76015
Methylene Chloride	ND	8.0	60		µg/L	20	3/17/2021 9:37:27 PM	A76015
n-Butylbenzene	6.0	5.1	60	J	µg/L	20	3/17/2021 9:37:27 PM	A76015
n-Propylbenzene	110	3.6	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
sec-Butylbenzene	ND	12	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Styrene	ND	2.6	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
tert-Butylbenzene	ND	4.9	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,1,1,2-Tetrachloroethane	ND	5.3	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,1,2,2-Tetrachloroethane	ND	5.5	40		µg/L	20	3/17/2021 9:37:27 PM	A76015
Tetrachloroethene (PCE)	ND	7.1	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
trans-1,2-DCE	ND	9.7	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
trans-1,3-Dichloropropene	ND	6.8	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,2,3-Trichlorobenzene	ND	2.7	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,2,4-Trichlorobenzene	ND	4.8	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,1,1-Trichloroethane	ND	6.0	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,1,2-Trichloroethane	ND	3.8	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Trichloroethene (TCE)	ND	4.1	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Trichlorofluoromethane	ND	1.8	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
1,2,3-Trichloropropane	ND	8.8	40		µg/L	20	3/17/2021 9:37:27 PM	A76015
Vinyl chloride	ND	3.9	20		µg/L	20	3/17/2021 9:37:27 PM	A76015
Xylenes, Total	6400	110	300		µg/L	200	3/18/2021 1:05:05 PM	A76055
Surr: 1,2-Dichloroethane-d4	86.9	0	70-130		%Rec	20	3/17/2021 9:37:27 PM	A76015
Surr: 4-Bromofluorobenzene	86.7	0	70-130		%Rec	20	3/17/2021 9:37:27 PM	A76015
Surr: Dibromofluoromethane	86.7	0	70-130		%Rec	20	3/17/2021 9:37:27 PM	A76015
Surr: Toluene-d8	84.3	0	70-130		%Rec	20	3/17/2021 9:37:27 PM	A76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	86	0.16	1.0		mg/L	20	3/17/2021 9:37:27 PM	B76015
Surr: BFB	93.6	0	70-130		%Rec	20	3/17/2021 9:37:27 PM	B76015

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-49
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 3:10:00 PM
Lab ID: 2103532-004B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	2.2	0.075	0.085		mg/L	1	3/23/2021 5:11:13 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 5:11:13 PM	58742
Surr: DNOP	114	0	45.1-141		%Rec	1	3/23/2021 5:11:13 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-49
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 3:10:00 PM
Lab ID: 2103532-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Azobenzene	ND	0.55	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Benzoic acid	ND	1.1	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Bis(2-ethylhexyl)phthalate	7.7	4.5	10	J	µg/L	1	3/18/2021 12:11:59 AM	58720
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Carbazole	3.9	0.56	5.0	J	µg/L	1	3/18/2021 12:11:59 AM	58720
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Di-n-butyl phthalate	8.1	6.5	10	J	µg/L	1	3/18/2021 12:11:59 AM	58720
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/18/2021 12:11:59 AM	58720
Dibenzofuran	2.1	0.38	5.0	J	µg/L	1	3/18/2021 12:11:59 AM	58720
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Diethyl phthalate	ND	3.9	10		µg/L	1	3/18/2021 12:11:59 AM	58720
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/18/2021 12:11:59 AM	58720
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
2,4-Dimethylphenol	10	0.97	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Isophorone	ND	0.40	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
2-Methylphenol	15	0.51	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-49
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 3:10:00 PM
Lab ID: 2103532-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Phenol	51	0.33	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Pyridine	ND	0.93	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/18/2021 12:11:59 AM	58720
Surr: 2-Fluorophenol	0	0	15-88.8	S	%Rec	1	3/18/2021 12:11:59 AM	58720
Surr: Phenol-d5	27.9	0	15-71.9		%Rec	1	3/18/2021 12:11:59 AM	58720
Surr: 2,4,6-Tribromophenol	2.81	0	15-97.4	S	%Rec	1	3/18/2021 12:11:59 AM	58720
Surr: Nitrobenzene-d5	61.6	0	15-117		%Rec	1	3/18/2021 12:11:59 AM	58720
Surr: 2-Fluorobiphenyl	61.2	0	15-100		%Rec	1	3/18/2021 12:11:59 AM	58720
Surr: 4-Terphenyl-d14	102	0	15-120		%Rec	1	3/18/2021 12:11:59 AM	58720
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.48	10	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Naphthalene	42	0.34	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
1-Methylnaphthalene	5.6	0.24	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
2-Methylnaphthalene	7.8	0.34	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Acenaphthylene	ND	0.43	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Acenaphthene	ND	0.31	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Fluorene	1.4	0.31	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Phenanthrene	ND	0.57	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Anthracene	ND	0.34	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Fluoranthene	ND	1.0	2.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Pyrene	ND	1.6	2.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Chrysene	ND	0.24	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Benzo(b)fluoranthene	ND	0.57	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Benzo(k)fluoranthene	ND	0.36	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Benzo(a)pyrene	ND	0.34	0.70	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Dibenz(a,h)anthracene	ND	0.34	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Benzo(g,h,i)perylene	ND	0.34	1.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Indeno(1,2,3-cd)pyrene	ND	0.43	3.0	D	µg/L	10	3/19/2021 6:50:00 PM	58709
Surr: Nitrobenzene-d5	0	0	26.3-112	SD	%Rec	10	3/19/2021 6:50:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-49
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 3:10:00 PM
Lab ID: 2103532-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 2-Fluorobiphenyl	0	0	21.1-110	SD	%Rec	10	3/19/2021 6:50:00 PM	58709
Surr: 4-Terphenyl-d14	0	0	17.6-167	SD	%Rec	10	3/19/2021 6:50:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-49
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 3:10:00 PM
Lab ID: 2103532-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.22	0.50		mg/L	5	3/11/2021 1:16:17 AM	A75861
Chloride	1700	50	100	*	mg/L	200	3/11/2021 5:20:17 PM	R75889
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/11/2021 1:16:17 AM	A75861
Bromide	1.0	0.25	0.50		mg/L	5	3/11/2021 1:16:17 AM	A75861
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	3/11/2021 1:16:17 AM	A75861
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/11/2021 1:16:17 AM	A75861
Sulfate	ND	1.2	2.5		mg/L	5	3/11/2021 1:16:17 AM	A75861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-49
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 3:10:00 PM
Lab ID: 2103532-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 10:29:10 AM	A75995
Barium	9.2	0.022	0.040	*	mg/L	20	3/17/2021 11:28:53 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 10:29:10 AM	A75995
Boron	0.65	0.0067	0.040		mg/L	1	3/17/2021 10:29:10 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 10:29:10 AM	A75995
Calcium	350	0.57	5.0		mg/L	5	3/17/2021 10:30:31 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 10:29:10 AM	A75995
Cobalt	0.0034	0.0024	0.0060	J	mg/L	1	3/17/2021 10:29:10 AM	A75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 10:29:10 AM	A75995
Iron	16	0.21	0.40	*	mg/L	20	3/17/2021 11:28:53 AM	A75995
Magnesium	90	0.067	1.0		mg/L	1	3/17/2021 10:29:10 AM	A75995
Manganese	7.8	0.012	0.040	*	mg/L	20	3/17/2021 11:28:53 AM	A75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 10:29:10 AM	A75995
Nickel	0.0053	0.0033	0.010	J	mg/L	1	3/17/2021 10:29:10 AM	A75995
Potassium	1.4	0.16	1.0		mg/L	1	3/17/2021 10:29:10 AM	A75995
Silver	0.0039	0.0013	0.0050	J	mg/L	1	3/17/2021 10:29:10 AM	A75995
Sodium	880	2.7	20		mg/L	20	3/17/2021 11:28:53 AM	A75995
Zinc	0.016	0.0060	0.010		mg/L	1	3/17/2021 10:29:10 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/15/2021 6:47:41 PM	A75953
Arsenic	ND	0.0010	0.0050		mg/L	5	3/15/2021 6:47:41 PM	A75953
Lead	ND	0.00017	0.0025		mg/L	5	3/15/2021 6:47:41 PM	A75953
Selenium	ND	0.0033	0.0050		mg/L	5	3/15/2021 6:47:41 PM	A75953
Thallium	ND	0.00017	0.0025		mg/L	5	3/15/2021 6:47:41 PM	A75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:09:55 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-49
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/9/2021 3:10:00 PM
Lab ID: 2103532-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	3.7	0.037	0.10	*	mg/L	5	3/14/2021 10:09:56 AM	58685
Barium	8.9	0.033	0.060	*	mg/L	20	3/14/2021 10:48:32 AM	58685
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 10:08:39 AM	58685
Boron	0.66	0.0074	0.040		mg/L	1	3/14/2021 10:08:39 AM	58685
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 10:08:39 AM	58685
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 10:08:39 AM	58685
Cobalt	0.0085	0.0024	0.0060		mg/L	1	3/14/2021 10:08:39 AM	58685
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 10:08:39 AM	58685
Iron	18	0.26	1.0	*	mg/L	20	3/14/2021 10:48:32 AM	58685
Manganese	7.9	0.016	0.040	*	mg/L	20	3/14/2021 10:48:32 AM	58685
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 10:08:39 AM	58685
Nickel	0.0047	0.0033	0.010	J	mg/L	1	3/14/2021 10:08:39 AM	58685
Silver	0.0065	0.0013	0.0050		mg/L	1	3/14/2021 10:08:39 AM	58685
Zinc	ND	0.0064	0.010		mg/L	1	3/14/2021 10:08:39 AM	58685
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 12:05:37 PM	58685
Arsenic	ND	0.0013	0.0050		mg/L	5	3/15/2021 1:02:46 PM	58685
Lead	0.0019	0.00017	0.0025	J	mg/L	5	3/15/2021 1:02:46 PM	58685
Selenium	ND	0.0033	0.0050		mg/L	5	3/15/2021 1:02:46 PM	58685
Thallium	ND	0.0012	0.0012		mg/L	5	3/15/2021 1:02:46 PM	58685
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:21:27 PM	58746

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:20:00 AM
Lab ID: 2103532-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	5100	23	100		µg/L	100	3/18/2021 1:32:25 PM	A76055
Toluene	280	1.0	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Ethylbenzene	1500	21	100		µg/L	100	3/18/2021 1:32:25 PM	A76055
Methyl tert-butyl ether (MTBE)	9.0	2.0	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,2,4-Trimethylbenzene	830	12	100		µg/L	100	3/18/2021 1:32:25 PM	A76055
1,3,5-Trimethylbenzene	200	0.91	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,2-Dichloroethane (EDC)	ND	1.1	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,2-Dibromoethane (EDB)	ND	1.5	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Naphthalene	160	1.4	10		µg/L	5	3/17/2021 10:04:23 PM	A76015
1-Methylnaphthalene	56	4.2	20		µg/L	5	3/17/2021 10:04:23 PM	A76015
2-Methylnaphthalene	85	3.5	20		µg/L	5	3/17/2021 10:04:23 PM	A76015
Acetone	ND	12	50		µg/L	5	3/17/2021 10:04:23 PM	A76015
Bromobenzene	ND	1.4	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Bromodichloromethane	ND	1.0	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Bromoform	ND	1.6	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Bromomethane	ND	7.8	15		µg/L	5	3/17/2021 10:04:23 PM	A76015
2-Butanone	ND	5.6	50		µg/L	5	3/17/2021 10:04:23 PM	A76015
Carbon disulfide	ND	2.2	50		µg/L	5	3/17/2021 10:04:23 PM	A76015
Carbon Tetrachloride	ND	0.88	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Chlorobenzene	ND	0.68	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Chloroethane	ND	1.9	10		µg/L	5	3/17/2021 10:04:23 PM	A76015
Chloroform	ND	0.67	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Chloromethane	ND	2.0	15		µg/L	5	3/17/2021 10:04:23 PM	A76015
2-Chlorotoluene	ND	0.66	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
4-Chlorotoluene	ND	2.6	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
cis-1,2-DCE	13	1.9	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
cis-1,3-Dichloropropene	ND	1.8	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,2-Dibromo-3-chloropropane	ND	2.9	10		µg/L	5	3/17/2021 10:04:23 PM	A76015
Dibromochloromethane	ND	1.4	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Dibromomethane	ND	1.5	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,2-Dichlorobenzene	ND	0.77	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,3-Dichlorobenzene	ND	0.81	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,4-Dichlorobenzene	ND	1.0	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Dichlorodifluoromethane	ND	2.2	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,1-Dichloroethane	27	1.4	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,1-Dichloroethene	2.4	0.65	5.0	J	µg/L	5	3/17/2021 10:04:23 PM	A76015
1,2-Dichloropropane	ND	0.67	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,3-Dichloropropane	ND	0.90	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
2,2-Dichloropropane	ND	1.3	10		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,1-Dichloropropene	ND	0.90	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:20:00 AM
Lab ID: 2103532-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	1.6	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
2-Hexanone	ND	9.0	50		µg/L	5	3/17/2021 10:04:23 PM	A76015
Isopropylbenzene	54	0.91	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
4-Isopropyltoluene	4.3	1.0	5.0	J	µg/L	5	3/17/2021 10:04:23 PM	A76015
4-Methyl-2-pentanone	ND	5.6	50		µg/L	5	3/17/2021 10:04:23 PM	A76015
Methylene Chloride	ND	2.0	15		µg/L	5	3/17/2021 10:04:23 PM	A76015
n-Butylbenzene	18	1.3	15		µg/L	5	3/17/2021 10:04:23 PM	A76015
n-Propylbenzene	98	0.91	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
sec-Butylbenzene	8.5	3.0	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Styrene	ND	0.65	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
tert-Butylbenzene	ND	1.2	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,1,1,2-Tetrachloroethane	ND	1.3	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,1,2,2-Tetrachloroethane	ND	1.4	10		µg/L	5	3/17/2021 10:04:23 PM	A76015
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
trans-1,2-DCE	ND	2.4	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
trans-1,3-Dichloropropene	ND	1.7	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,2,3-Trichlorobenzene	ND	0.67	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,2,4-Trichlorobenzene	ND	1.2	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,1,2-Trichloroethane	ND	0.94	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Trichlorofluoromethane	ND	0.46	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
1,2,3-Trichloropropane	ND	2.2	10		µg/L	5	3/17/2021 10:04:23 PM	A76015
Vinyl chloride	10	0.98	5.0		µg/L	5	3/17/2021 10:04:23 PM	A76015
Xylenes, Total	7000	55	150		µg/L	100	3/18/2021 1:32:25 PM	A76055
Surr: 1,2-Dichloroethane-d4	83.8	0	70-130		%Rec	5	3/17/2021 10:04:23 PM	A76015
Surr: 4-Bromofluorobenzene	84.3	0	70-130		%Rec	5	3/17/2021 10:04:23 PM	A76015
Surr: Dibromofluoromethane	84.6	0	70-130		%Rec	5	3/17/2021 10:04:23 PM	A76015
Surr: Toluene-d8	87.1	0	70-130		%Rec	5	3/17/2021 10:04:23 PM	A76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	40	0.040	0.25		mg/L	5	3/17/2021 10:04:23 PM	B76015
Surr: BFB	92.7	0	70-130		%Rec	5	3/17/2021 10:04:23 PM	B76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:20:00 AM
Lab ID: 2103532-005B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	1.4	0.075	0.085		mg/L	1	3/23/2021 5:35:12 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 5:35:12 PM	58742
Surr: DNOP	96.5	0	45.1-141		%Rec	1	3/23/2021 5:35:12 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:20:00 AM
Lab ID: 2103532-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Azobenzene	ND	0.55	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Benzoic acid	ND	1.1	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Bis(2-ethylhexyl)phthalate	7.5	4.5	10	J	µg/L	1	3/18/2021 12:53:08 AM	58720
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Carbazole	5.6	0.56	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Di-n-butyl phthalate	7.8	6.5	10	J	µg/L	1	3/18/2021 12:53:08 AM	58720
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/18/2021 12:53:08 AM	58720
Dibenzofuran	3.0	0.38	5.0	J	µg/L	1	3/18/2021 12:53:08 AM	58720
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Diethyl phthalate	ND	3.9	10		µg/L	1	3/18/2021 12:53:08 AM	58720
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/18/2021 12:53:08 AM	58720
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
2,4-Dimethylphenol	18	0.97	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Isophorone	ND	0.40	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
2-Methylphenol	6.9	0.51	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:20:00 AM
Lab ID: 2103532-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Phenol	33	0.33	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Pyridine	ND	0.93	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/18/2021 12:53:08 AM	58720
Surr: 2-Fluorophenol	0	0	15-88.8	S	%Rec	1	3/18/2021 12:53:08 AM	58720
Surr: Phenol-d5	48.2	0	15-71.9		%Rec	1	3/18/2021 12:53:08 AM	58720
Surr: 2,4,6-Tribromophenol	78.8	0	15-97.4		%Rec	1	3/18/2021 12:53:08 AM	58720
Surr: Nitrobenzene-d5	67.4	0	15-117		%Rec	1	3/18/2021 12:53:08 AM	58720
Surr: 2-Fluorobiphenyl	70.5	0	15-100		%Rec	1	3/18/2021 12:53:08 AM	58720
Surr: 4-Terphenyl-d14	95.8	0	15-120		%Rec	1	3/18/2021 12:53:08 AM	58720
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	140	0.34	1.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
1-Methylnaphthalene	50	0.24	1.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
2-Methylnaphthalene	80	0.34	1.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Acenaphthylene	ND	0.43	1.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Acenaphthene	0.80	0.31	1.0	JD	µg/L	10	3/19/2021 7:36:00 PM	58709
Fluorene	2.6	0.31	1.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Phenanthrene	1.0	0.57	1.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Anthracene	ND	0.34	1.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Fluoranthene	ND	1.0	2.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Pyrene	ND	1.6	2.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Chrysene	ND	0.24	1.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Benzo(b)fluoranthene	ND	0.57	1.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Benzo(k)fluoranthene	ND	0.36	1.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Benzo(a)pyrene	ND	0.34	0.70	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Dibenz(a,h)anthracene	ND	0.34	1.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Benzo(g,h,i)perylene	ND	0.34	1.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Indeno(1,2,3-cd)pyrene	ND	0.43	3.0	D	µg/L	10	3/19/2021 7:36:00 PM	58709
Surr: Nitrobenzene-d5	0	0	26.3-112	SD	%Rec	10	3/19/2021 7:36:00 PM	58709
Surr: 2-Fluorobiphenyl	0	0	21.1-110	SD	%Rec	10	3/19/2021 7:36:00 PM	58709

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:20:00 AM
Lab ID: 2103532-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	0	0	17.6-167	SD	%Rec	10	3/19/2021 7:36:00 PM	58709

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:20:00 AM
Lab ID: 2103532-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.66	0.22	0.50		mg/L	5	3/11/2021 2:07:46 AM	A75861
Chloride	930	25	50	*	mg/L	100	3/11/2021 5:33:08 PM	R75889
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/11/2021 2:07:46 AM	A75861
Bromide	0.80	0.25	0.50		mg/L	5	3/11/2021 2:07:46 AM	A75861
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	3/11/2021 2:07:46 AM	A75861
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/11/2021 2:07:46 AM	A75861
Sulfate	ND	1.2	2.5		mg/L	5	3/11/2021 2:07:46 AM	A75861

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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:20:00 AM
Lab ID: 2103532-005E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 10:31:51 AM	A75995
Barium	10	0.022	0.040	*	mg/L	20	3/17/2021 11:30:29 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 10:31:51 AM	A75995
Boron	0.41	0.0067	0.040		mg/L	1	3/17/2021 10:31:51 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 10:31:51 AM	A75995
Calcium	300	0.57	5.0		mg/L	5	3/17/2021 10:33:11 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 10:31:51 AM	A75995
Cobalt	0.0039	0.0024	0.0060	J	mg/L	1	3/17/2021 10:31:51 AM	A75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 10:31:51 AM	A75995
Iron	9.3	0.21	0.40	*	mg/L	20	3/17/2021 11:30:29 AM	A75995
Magnesium	68	0.067	1.0		mg/L	1	3/17/2021 10:31:51 AM	A75995
Manganese	5.3	0.012	0.040	*	mg/L	20	3/17/2021 11:30:29 AM	A75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 10:31:51 AM	A75995
Nickel	0.017	0.0033	0.010		mg/L	1	3/17/2021 10:31:51 AM	A75995
Potassium	0.60	0.16	1.0	J	mg/L	1	3/17/2021 10:31:51 AM	A75995
Silver	0.0039	0.0013	0.0050	J	mg/L	1	3/17/2021 10:31:51 AM	A75995
Sodium	410	0.69	5.0		mg/L	5	3/17/2021 10:33:11 AM	A75995
Zinc	0.013	0.0060	0.010		mg/L	1	3/17/2021 10:31:51 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 3:52:44 PM	A75953
Arsenic	0.0042	0.0010	0.0050	J	mg/L	5	3/15/2021 6:50:24 PM	A75953
Lead	ND	0.000034	0.00050		mg/L	1	3/15/2021 3:52:44 PM	A75953
Selenium	ND	0.0033	0.0050		mg/L	5	3/15/2021 6:50:24 PM	A75953
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 3:52:44 PM	A75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:17:04 PM	58800

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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:20:00 AM
Lab ID: 2103532-005F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	1.0	0.037	0.10	*	mg/L	5	3/14/2021 10:12:32 AM	58685
Barium	9.7	0.033	0.060	*	mg/L	20	3/14/2021 10:50:08 AM	58685
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 10:11:15 AM	58685
Boron	0.41	0.0074	0.040		mg/L	1	3/14/2021 10:11:15 AM	58685
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 10:11:15 AM	58685
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 10:11:15 AM	58685
Cobalt	0.0059	0.0024	0.0060	J	mg/L	1	3/14/2021 10:11:15 AM	58685
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 10:11:15 AM	58685
Iron	12	0.26	1.0	*	mg/L	20	3/14/2021 10:50:08 AM	58685
Manganese	5.5	0.016	0.040	*	mg/L	20	3/14/2021 10:50:08 AM	58685
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 10:11:15 AM	58685
Nickel	0.014	0.0033	0.010		mg/L	1	3/14/2021 10:11:15 AM	58685
Silver	0.0062	0.0013	0.0050		mg/L	1	3/14/2021 10:11:15 AM	58685
Zinc	ND	0.0064	0.010		mg/L	1	3/14/2021 10:11:15 AM	58685
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 12:08:00 PM	58685
Arsenic	0.0080	0.00026	0.0010		mg/L	1	3/15/2021 12:08:00 PM	58685
Lead	0.00065	0.000034	0.00050		mg/L	1	3/15/2021 12:08:00 PM	58685
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 12:08:00 PM	58685
Thallium	ND	0.00025	0.00025		mg/L	1	3/15/2021 12:08:00 PM	58685
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:28:37 PM	58746

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:50:00 AM
Lab ID: 2103532-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	4900	23	100		µg/L	100	3/18/2021 1:59:33 PM	A76055
Toluene	250	1.0	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Ethylbenzene	210	1.1	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Methyl tert-butyl ether (MTBE)	52	2.0	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,2,4-Trimethylbenzene	110	0.61	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,3,5-Trimethylbenzene	23	0.91	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,2-Dichloroethane (EDC)	2.0	1.1	5.0	J	µg/L	5	3/17/2021 10:31:20 PM	A76015
1,2-Dibromoethane (EDB)	ND	1.5	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Naphthalene	19	1.4	10		µg/L	5	3/17/2021 10:31:20 PM	A76015
1-Methylnaphthalene	5.0	4.2	20	J	µg/L	5	3/17/2021 10:31:20 PM	A76015
2-Methylnaphthalene	5.9	3.5	20	J	µg/L	5	3/17/2021 10:31:20 PM	A76015
Acetone	ND	12	50		µg/L	5	3/17/2021 10:31:20 PM	A76015
Bromobenzene	ND	1.4	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Bromodichloromethane	ND	1.0	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Bromoform	ND	1.6	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Bromomethane	ND	7.8	15		µg/L	5	3/17/2021 10:31:20 PM	A76015
2-Butanone	ND	5.6	50		µg/L	5	3/17/2021 10:31:20 PM	A76015
Carbon disulfide	ND	2.2	50		µg/L	5	3/17/2021 10:31:20 PM	A76015
Carbon Tetrachloride	ND	0.88	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Chlorobenzene	ND	0.68	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Chloroethane	23	1.9	10		µg/L	5	3/17/2021 10:31:20 PM	A76015
Chloroform	ND	0.67	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Chloromethane	ND	2.0	15		µg/L	5	3/17/2021 10:31:20 PM	A76015
2-Chlorotoluene	ND	0.66	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
4-Chlorotoluene	ND	2.6	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
cis-1,3-Dichloropropene	ND	1.8	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,2-Dibromo-3-chloropropane	ND	2.9	10		µg/L	5	3/17/2021 10:31:20 PM	A76015
Dibromochloromethane	ND	1.4	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Dibromomethane	ND	1.5	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,2-Dichlorobenzene	ND	0.77	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,3-Dichlorobenzene	ND	0.81	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,4-Dichlorobenzene	ND	1.0	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Dichlorodifluoromethane	ND	2.2	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,1-Dichloroethane	21	1.4	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,1-Dichloroethene	1.3	0.65	5.0	J	µg/L	5	3/17/2021 10:31:20 PM	A76015
1,2-Dichloropropane	ND	0.67	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,3-Dichloropropane	ND	0.90	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
2,2-Dichloropropane	ND	1.3	10		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,1-Dichloropropene	ND	0.90	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:50:00 AM
Lab ID: 2103532-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	1.6	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
2-Hexanone	ND	9.0	50		µg/L	5	3/17/2021 10:31:20 PM	A76015
Isopropylbenzene	7.4	0.91	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
4-Methyl-2-pentanone	ND	5.6	50		µg/L	5	3/17/2021 10:31:20 PM	A76015
Methylene Chloride	ND	2.0	15		µg/L	5	3/17/2021 10:31:20 PM	A76015
n-Butylbenzene	2.6	1.3	15	J	µg/L	5	3/17/2021 10:31:20 PM	A76015
n-Propylbenzene	10	0.91	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
sec-Butylbenzene	3.4	3.0	5.0	J	µg/L	5	3/17/2021 10:31:20 PM	A76015
Styrene	ND	0.65	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
tert-Butylbenzene	ND	1.2	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,1,1,2-Tetrachloroethane	ND	1.3	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,1,2,2-Tetrachloroethane	ND	1.4	10		µg/L	5	3/17/2021 10:31:20 PM	A76015
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
trans-1,2-DCE	ND	2.4	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
trans-1,3-Dichloropropene	ND	1.7	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,2,3-Trichlorobenzene	ND	0.67	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,2,4-Trichlorobenzene	ND	1.2	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,1,2-Trichloroethane	ND	0.94	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Trichlorofluoromethane	ND	0.46	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
1,2,3-Trichloropropane	ND	2.2	10		µg/L	5	3/17/2021 10:31:20 PM	A76015
Vinyl chloride	29	0.98	5.0		µg/L	5	3/17/2021 10:31:20 PM	A76015
Xylenes, Total	690	2.8	7.5		µg/L	5	3/17/2021 10:31:20 PM	A76015
Surr: 1,2-Dichloroethane-d4	90.9	0	70-130		%Rec	5	3/17/2021 10:31:20 PM	A76015
Surr: 4-Bromofluorobenzene	87.5	0	70-130		%Rec	5	3/17/2021 10:31:20 PM	A76015
Surr: Dibromofluoromethane	92.7	0	70-130		%Rec	5	3/17/2021 10:31:20 PM	A76015
Surr: Toluene-d8	83.3	0	70-130		%Rec	5	3/17/2021 10:31:20 PM	A76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	14	0.040	0.25		mg/L	5	3/17/2021 10:31:20 PM	B76015
Surr: BFB	93.7	0	70-130		%Rec	5	3/17/2021 10:31:20 PM	B76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:50:00 AM
Lab ID: 2103532-006B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.62	0.075	0.085		mg/L	1	3/23/2021 5:59:07 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 5:59:07 PM	58742
Surr: DNOP	87.1	0	45.1-141		%Rec	1	3/23/2021 5:59:07 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:50:00 AM
Lab ID: 2103532-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Azobenzene	ND	0.55	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Benzoic acid	ND	1.1	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Bis(2-ethylhexyl)phthalate	6.4	4.5	10	J	µg/L	1	3/18/2021 1:33:32 AM	58720
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Carbazole	4.4	0.56	5.0	J	µg/L	1	3/18/2021 1:33:32 AM	58720
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/18/2021 1:33:32 AM	58720
Di-n-octyl phthalate	9.4	3.1	10	J	µg/L	1	3/18/2021 1:33:32 AM	58720
Dibenzofuran	2.3	0.38	5.0	J	µg/L	1	3/18/2021 1:33:32 AM	58720
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Diethyl phthalate	ND	3.9	10		µg/L	1	3/18/2021 1:33:32 AM	58720
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/18/2021 1:33:32 AM	58720
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
2,4-Dimethylphenol	8.8	0.97	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Isophorone	ND	0.40	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
2-Methylphenol	17	0.51	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
3+4-Methylphenol	11	0.45	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720

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Qualifiers:

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ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
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RL	Reporting Limit
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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:50:00 AM
Lab ID: 2103532-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Phenol	86	0.33	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Pyridine	ND	0.93	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/18/2021 1:33:32 AM	58720
Surr: 2-Fluorophenol	56.4	0	15-88.8		%Rec	1	3/18/2021 1:33:32 AM	58720
Surr: Phenol-d5	45.2	0	15-71.9		%Rec	1	3/18/2021 1:33:32 AM	58720
Surr: 2,4,6-Tribromophenol	73.0	0	15-97.4		%Rec	1	3/18/2021 1:33:32 AM	58720
Surr: Nitrobenzene-d5	64.9	0	15-117		%Rec	1	3/18/2021 1:33:32 AM	58720
Surr: 2-Fluorobiphenyl	65.6	0	15-100		%Rec	1	3/18/2021 1:33:32 AM	58720
Surr: 4-Terphenyl-d14	105	0	15-120		%Rec	1	3/18/2021 1:33:32 AM	58720
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	12	0.34	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
1-Methylnaphthalene	3.2	0.24	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
2-Methylnaphthalene	3.8	0.34	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Acenaphthylene	ND	0.43	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Acenaphthene	ND	0.31	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Fluorene	1.4	0.31	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Phenanthrene	ND	0.57	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Anthracene	ND	0.34	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Fluoranthene	ND	1.0	2.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Pyrene	ND	1.6	2.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Chrysene	ND	0.24	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Benzo(b)fluoranthene	ND	0.57	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Benzo(k)fluoranthene	ND	0.36	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Benzo(a)pyrene	ND	0.34	0.70	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Dibenz(a,h)anthracene	ND	0.34	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Benzo(g,h,i)perylene	ND	0.34	1.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Indeno(1,2,3-cd)pyrene	ND	0.43	3.0	D	µg/L	10	3/19/2021 8:20:00 PM	58709
Surr: Nitrobenzene-d5	0	0	26.3-112	SD	%Rec	10	3/19/2021 8:20:00 PM	58709
Surr: 2-Fluorobiphenyl	0	0	21.1-110	SD	%Rec	10	3/19/2021 8:20:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:50:00 AM
Lab ID: 2103532-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	0	0	17.6-167	SD	%Rec	10	3/19/2021 8:20:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:50:00 AM
Lab ID: 2103532-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.76	0.22	0.50		mg/L	5	3/11/2021 2:33:30 AM	A75861
Chloride	1700	50	100	*	mg/L	200	3/11/2021 5:46:01 PM	R75889
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/11/2021 2:33:30 AM	A75861
Bromide	1.0	0.25	0.50		mg/L	5	3/11/2021 2:33:30 AM	A75861
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	3/11/2021 2:33:30 AM	A75861
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/11/2021 2:33:30 AM	A75861
Sulfate	42	1.2	2.5		mg/L	5	3/11/2021 2:33:30 AM	A75861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:50:00 AM
Lab ID: 2103532-006E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.0062	0.0056	0.020	J	mg/L	1	3/17/2021 10:34:34 AM	A75995
Barium	3.0	0.0056	0.010	*	mg/L	5	3/17/2021 10:35:54 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 10:34:34 AM	A75995
Boron	0.59	0.0067	0.040		mg/L	1	3/17/2021 10:34:34 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 10:34:34 AM	A75995
Calcium	300	0.57	5.0		mg/L	5	3/17/2021 10:35:54 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 10:34:34 AM	A75995
Cobalt	0.011	0.0024	0.0060		mg/L	1	3/17/2021 10:34:34 AM	A75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 10:34:34 AM	A75995
Iron	6.3	0.21	0.40	*	mg/L	20	3/17/2021 11:31:57 AM	A75995
Magnesium	79	0.067	1.0		mg/L	1	3/17/2021 10:34:34 AM	A75995
Manganese	5.6	0.012	0.040	*	mg/L	20	3/17/2021 11:31:57 AM	A75995
Molybdenum	0.034	0.0056	0.0080		mg/L	1	3/17/2021 10:34:34 AM	A75995
Nickel	0.030	0.0033	0.010		mg/L	1	3/17/2021 10:34:34 AM	A75995
Potassium	1.8	0.16	1.0		mg/L	1	3/17/2021 10:34:34 AM	A75995
Silver	0.0043	0.0013	0.0050	J	mg/L	1	3/17/2021 10:34:34 AM	A75995
Sodium	1100	2.7	20		mg/L	20	3/17/2021 11:31:57 AM	A75995
Zinc	0.021	0.0060	0.010		mg/L	1	3/17/2021 10:34:34 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/15/2021 6:53:07 PM	A75953
Arsenic	0.0087	0.0010	0.0050		mg/L	5	3/15/2021 6:53:07 PM	A75953
Lead	ND	0.00017	0.0025		mg/L	5	3/15/2021 6:53:07 PM	A75953
Selenium	ND	0.0033	0.0050		mg/L	5	3/15/2021 6:53:07 PM	A75953
Thallium	ND	0.00017	0.0025		mg/L	5	3/15/2021 6:53:07 PM	A75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:19:28 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 8:50:00 AM
Lab ID: 2103532-006F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	1.3	0.037	0.10	*	mg/L	5	3/14/2021 10:19:58 AM	58685
Barium	3.3	0.0082	0.015	*	mg/L	5	3/14/2021 10:19:58 AM	58685
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 10:18:40 AM	58685
Boron	0.59	0.0074	0.040		mg/L	1	3/14/2021 10:18:40 AM	58685
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 10:18:40 AM	58685
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 10:18:40 AM	58685
Cobalt	0.013	0.0024	0.0060		mg/L	1	3/14/2021 10:18:40 AM	58685
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 10:18:40 AM	58685
Iron	9.8	0.13	0.50	*	mg/L	10	3/14/2021 10:51:46 AM	58685
Manganese	6.0	0.0081	0.020	*	mg/L	10	3/14/2021 10:51:46 AM	58685
Molybdenum	0.033	0.0065	0.0080		mg/L	1	3/14/2021 10:18:40 AM	58685
Nickel	0.026	0.0033	0.010		mg/L	1	3/14/2021 10:18:40 AM	58685
Silver	0.0047	0.0013	0.0050	J	mg/L	1	3/16/2021 9:20:43 AM	58685
Zinc	0.015	0.0064	0.010		mg/L	1	3/14/2021 10:18:40 AM	58685
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 12:10:24 PM	58685
Arsenic	0.016	0.00026	0.0010	*	mg/L	1	3/15/2021 12:10:24 PM	58685
Lead	0.00085	0.00017	0.0025	J	mg/L	5	3/15/2021 1:05:09 PM	58685
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 12:10:24 PM	58685
Thallium	ND	0.0012	0.0012		mg/L	5	3/15/2021 1:05:09 PM	58685
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:31:01 PM	58746

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:20:00 AM
Lab ID: 2103532-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	1600	11	50		µg/L	50	3/18/2021 2:26:36 PM	A76055
Toluene	23	1.0	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
Ethylbenzene	300	1.1	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
Methyl tert-butyl ether (MTBE)	26	2.0	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,2,4-Trimethylbenzene	110	0.61	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,3,5-Trimethylbenzene	2.3	0.91	5.0	J	µg/L	5	3/17/2021 10:58:23 PM	A76015
1,2-Dichloroethane (EDC)	3.0	1.1	5.0	J	µg/L	5	3/17/2021 10:58:23 PM	A76015
1,2-Dibromoethane (EDB)	ND	1.5	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
Naphthalene	6.4	1.4	10	J	µg/L	5	3/17/2021 10:58:23 PM	A76015
1-Methylnaphthalene	31	4.2	20		µg/L	5	3/17/2021 10:58:23 PM	A76015
2-Methylnaphthalene	ND	3.5	20		µg/L	5	3/17/2021 10:58:23 PM	A76015
Acetone	ND	12	50		µg/L	5	3/17/2021 10:58:23 PM	A76015
Bromobenzene	ND	1.4	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
Bromodichloromethane	ND	1.0	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
Bromoform	ND	1.6	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
Bromomethane	ND	7.8	15		µg/L	5	3/17/2021 10:58:23 PM	A76015
2-Butanone	ND	5.6	50		µg/L	5	3/17/2021 10:58:23 PM	A76015
Carbon disulfide	ND	2.2	50		µg/L	5	3/17/2021 10:58:23 PM	A76015
Carbon Tetrachloride	ND	0.88	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
Chlorobenzene	ND	0.68	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
Chloroethane	ND	1.9	10		µg/L	5	3/17/2021 10:58:23 PM	A76015
Chloroform	ND	0.67	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
Chloromethane	ND	2.0	15		µg/L	5	3/17/2021 10:58:23 PM	A76015
2-Chlorotoluene	ND	0.66	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
4-Chlorotoluene	ND	2.6	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
cis-1,2-DCE	2.9	1.9	5.0	J	µg/L	5	3/17/2021 10:58:23 PM	A76015
cis-1,3-Dichloropropene	ND	1.8	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,2-Dibromo-3-chloropropane	ND	2.9	10		µg/L	5	3/17/2021 10:58:23 PM	A76015
Dibromochloromethane	ND	1.4	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
Dibromomethane	ND	1.5	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,2-Dichlorobenzene	ND	0.77	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,3-Dichlorobenzene	ND	0.81	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,4-Dichlorobenzene	ND	1.0	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
Dichlorodifluoromethane	ND	2.2	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,1-Dichloroethane	13	1.4	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,1-Dichloroethene	2.2	0.65	5.0	J	µg/L	5	3/17/2021 10:58:23 PM	A76015
1,2-Dichloropropane	ND	0.67	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,3-Dichloropropane	ND	0.90	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
2,2-Dichloropropane	ND	1.3	10		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,1-Dichloropropene	ND	0.90	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:20:00 AM
Lab ID: 2103532-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	1.6	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
2-Hexanone	ND	9.0	50		µg/L	5	3/17/2021 10:58:23 PM	A76015
Isopropylbenzene	20	0.91	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
4-Methyl-2-pentanone	ND	5.6	50		µg/L	5	3/17/2021 10:58:23 PM	A76015
Methylene Chloride	ND	2.0	15		µg/L	5	3/17/2021 10:58:23 PM	A76015
n-Butylbenzene	4.8	1.3	15	J	µg/L	5	3/17/2021 10:58:23 PM	A76015
n-Propylbenzene	59	0.91	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
sec-Butylbenzene	4.0	3.0	5.0	J	µg/L	5	3/17/2021 10:58:23 PM	A76015
Styrene	ND	0.65	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
tert-Butylbenzene	ND	1.2	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,1,1,2-Tetrachloroethane	ND	1.3	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,1,2,2-Tetrachloroethane	ND	1.4	10		µg/L	5	3/17/2021 10:58:23 PM	A76015
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
trans-1,2-DCE	ND	2.4	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
trans-1,3-Dichloropropene	ND	1.7	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,2,3-Trichlorobenzene	ND	0.67	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,2,4-Trichlorobenzene	ND	1.2	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,1,2-Trichloroethane	0.97	0.94	5.0	J	µg/L	5	3/17/2021 10:58:23 PM	A76015
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
Trichlorofluoromethane	ND	0.46	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
1,2,3-Trichloropropane	ND	2.2	10		µg/L	5	3/17/2021 10:58:23 PM	A76015
Vinyl chloride	15	0.98	5.0		µg/L	5	3/17/2021 10:58:23 PM	A76015
Xylenes, Total	46	2.8	7.5		µg/L	5	3/17/2021 10:58:23 PM	A76015
Surr: 1,2-Dichloroethane-d4	83.6	0	70-130		%Rec	5	3/17/2021 10:58:23 PM	A76015
Surr: 4-Bromofluorobenzene	91.6	0	70-130		%Rec	5	3/17/2021 10:58:23 PM	A76015
Surr: Dibromofluoromethane	82.5	0	70-130		%Rec	5	3/17/2021 10:58:23 PM	A76015
Surr: Toluene-d8	83.3	0	70-130		%Rec	5	3/17/2021 10:58:23 PM	A76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	5.8	0.040	0.25		mg/L	5	3/17/2021 10:58:23 PM	B76015
Surr: BFB	95.0	0	70-130		%Rec	5	3/17/2021 10:58:23 PM	B76015

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:20:00 AM
Lab ID: 2103532-007B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	0.0073	0.0061	0.0092	J	µg/L	1	3/16/2021 7:16:14 PM	58711

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:20:00 AM
Lab ID: 2103532-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	1.4	0.075	0.085		mg/L	1	3/23/2021 6:23:03 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 6:23:03 PM	58742
Surr: DNOP	90.8	0	45.1-141		%Rec	1	3/23/2021 6:23:03 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:20:00 AM
Lab ID: 2103532-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Azobenzene	ND	0.55	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Benzoic acid	ND	1.1	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Bis(2-ethylhexyl)phthalate	6.7	4.5	10	J	µg/L	1	3/18/2021 2:14:38 AM	58720
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Carbazole	ND	0.56	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/18/2021 2:14:38 AM	58720
Di-n-octyl phthalate	9.6	3.1	10	J	µg/L	1	3/18/2021 2:14:38 AM	58720
Dibenzofuran	2.2	0.38	5.0	J	µg/L	1	3/18/2021 2:14:38 AM	58720
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Diethyl phthalate	ND	3.9	10		µg/L	1	3/18/2021 2:14:38 AM	58720
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/18/2021 2:14:38 AM	58720
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Isophorone	ND	0.40	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:20:00 AM
Lab ID: 2103532-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Phenol	18	0.33	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Pyridine	ND	0.93	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/18/2021 2:14:38 AM	58720
Surr: 2-Fluorophenol	57.3	0	15-88.8		%Rec	1	3/18/2021 2:14:38 AM	58720
Surr: Phenol-d5	50.7	0	15-71.9		%Rec	1	3/18/2021 2:14:38 AM	58720
Surr: 2,4,6-Tribromophenol	60.8	0	15-97.4		%Rec	1	3/18/2021 2:14:38 AM	58720
Surr: Nitrobenzene-d5	69.7	0	15-117		%Rec	1	3/18/2021 2:14:38 AM	58720
Surr: 2-Fluorobiphenyl	70.1	0	15-100		%Rec	1	3/18/2021 2:14:38 AM	58720
Surr: 4-Terphenyl-d14	88.5	0	15-120		%Rec	1	3/18/2021 2:14:38 AM	58720
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	5.4	0.34	1.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
1-Methylnaphthalene	26	0.24	1.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
2-Methylnaphthalene	ND	0.34	1.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Acenaphthylene	ND	0.43	1.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Acenaphthene	0.40	0.31	1.0	JD	µg/L	10	3/19/2021 9:05:00 PM	58709
Fluorene	1.4	0.31	1.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Phenanthrene	ND	0.57	1.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Anthracene	ND	0.34	1.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Fluoranthene	ND	1.0	2.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Pyrene	ND	1.6	2.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Chrysene	ND	0.24	1.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Benzo(b)fluoranthene	ND	0.57	1.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Benzo(k)fluoranthene	ND	0.36	1.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Benzo(a)pyrene	ND	0.34	0.70	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Dibenz(a,h)anthracene	ND	0.34	1.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Benzo(g,h,i)perylene	ND	0.34	1.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Indeno(1,2,3-cd)pyrene	ND	0.43	3.0	D	µg/L	10	3/19/2021 9:05:00 PM	58709
Surr: Nitrobenzene-d5	0	0	26.3-112	SD	%Rec	10	3/19/2021 9:05:00 PM	58709
Surr: 2-Fluorobiphenyl	0	0	21.1-110	SD	%Rec	10	3/19/2021 9:05:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:20:00 AM
Lab ID: 2103532-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	0	0	17.6-167	SD	%Rec	10	3/19/2021 9:05:00 PM	58709

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:20:00 AM
Lab ID: 2103532-007E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 10:37:16 AM	A75995
Barium	0.44	0.0011	0.0020		mg/L	1	3/17/2021 10:37:16 AM	A75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 10:37:16 AM	A75995
Boron	0.77	0.0067	0.040		mg/L	1	3/17/2021 10:37:16 AM	A75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 10:37:16 AM	A75995
Calcium	730	2.3	20		mg/L	20	3/17/2021 11:33:31 AM	A75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 10:37:16 AM	A75995
Cobalt	0.0075	0.0024	0.0060		mg/L	1	3/17/2021 10:37:16 AM	A75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 10:37:16 AM	A75995
Iron	1.8	0.052	0.10	*	mg/L	5	3/17/2021 10:38:38 AM	A75995
Magnesium	120	0.34	5.0		mg/L	5	3/17/2021 10:38:38 AM	A75995
Manganese	6.8	0.012	0.040	*	mg/L	20	3/17/2021 11:33:31 AM	A75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 10:37:16 AM	A75995
Nickel	0.015	0.0033	0.010		mg/L	1	3/17/2021 10:37:16 AM	A75995
Potassium	3.4	0.16	1.0		mg/L	1	3/17/2021 10:37:16 AM	A75995
Silver	0.011	0.0013	0.0050		mg/L	1	3/17/2021 10:37:16 AM	A75995
Sodium	1400	2.7	20		mg/L	20	3/17/2021 11:33:31 AM	A75995
Zinc	0.014	0.0060	0.010		mg/L	1	3/17/2021 10:37:16 AM	A75995
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/15/2021 7:01:18 PM	A75953
Arsenic	0.0011	0.0010	0.0050	J	mg/L	5	3/15/2021 7:01:18 PM	A75953
Lead	ND	0.00017	0.0025		mg/L	5	3/15/2021 7:01:18 PM	A75953
Selenium	ND	0.0033	0.0050		mg/L	5	3/15/2021 7:01:18 PM	A75953
Thallium	ND	0.00017	0.0025		mg/L	5	3/15/2021 7:01:18 PM	A75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:21:52 PM	58800

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:20:00 AM
Lab ID: 2103532-007F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.24	0.0074	0.020	*	mg/L	1	3/14/2021 10:21:18 AM	58685
Barium	0.43	0.0016	0.0030		mg/L	1	3/14/2021 10:21:18 AM	58685
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 10:21:18 AM	58685
Boron	0.75	0.0074	0.040		mg/L	1	3/14/2021 10:21:18 AM	58685
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 10:21:18 AM	58685
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 10:21:18 AM	58685
Cobalt	0.010	0.0024	0.0060		mg/L	1	3/14/2021 10:21:18 AM	58685
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 10:21:18 AM	58685
Iron	3.1	0.064	0.25	*	mg/L	5	3/14/2021 10:22:37 AM	58685
Manganese	6.7	0.0081	0.020	*	mg/L	10	3/14/2021 10:57:43 AM	58685
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 10:21:18 AM	58685
Nickel	0.013	0.0033	0.010		mg/L	1	3/14/2021 10:21:18 AM	58685
Silver	0.015	0.0013	0.0050		mg/L	1	3/16/2021 10:47:56 AM	58685
Zinc	ND	0.0064	0.010		mg/L	1	3/14/2021 10:21:18 AM	58685
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/15/2021 1:07:33 PM	58685
Arsenic	ND	0.0013	0.0050		mg/L	5	3/15/2021 1:07:33 PM	58685
Lead	0.00050	0.00017	0.0025	J	mg/L	5	3/15/2021 1:07:33 PM	58685
Selenium	ND	0.0033	0.0050		mg/L	5	3/15/2021 1:07:33 PM	58685
Thallium	ND	0.0012	0.0012		mg/L	5	3/15/2021 1:07:33 PM	58685
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:33:24 PM	58746

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-02
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:20:00 AM
Lab ID: 2103532-007G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	1.0	0.22	0.50		mg/L	5	3/11/2021 8:59:06 PM	R75889
Chloride	2900	120	250	*	mg/L	500	3/12/2021 10:07:35 AM	R75905
Nitrogen, Nitrite (As N)	ND	0.28	2.0		mg/L	20	3/11/2021 9:12:38 PM	R75889
Bromide	1.1	0.25	0.50		mg/L	5	3/11/2021 8:59:06 PM	R75889
Nitrogen, Nitrate (As N)	0.28	0.10	0.50	J	mg/L	5	3/11/2021 8:59:06 PM	R75889
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/11/2021 8:59:06 PM	R75889
Sulfate	190	1.2	2.5		mg/L	5	3/11/2021 8:59:06 PM	R75889

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	170	2.3	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Toluene	67	2.0	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Ethylbenzene	5.6	2.1	10	J	µg/L	10	3/18/2021 1:13:50 AM	A76015
Methyl tert-butyl ether (MTBE)	67	3.9	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,2,4-Trimethylbenzene	31	1.2	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,3,5-Trimethylbenzene	26	1.8	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,2-Dichloroethane (EDC)	10	2.2	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Naphthalene	8.5	2.8	20	J	µg/L	10	3/18/2021 1:13:50 AM	A76015
1-Methylnaphthalene	ND	8.4	40		µg/L	10	3/18/2021 1:13:50 AM	A76015
2-Methylnaphthalene	ND	6.9	40		µg/L	10	3/18/2021 1:13:50 AM	A76015
Acetone	ND	23	100		µg/L	10	3/18/2021 1:13:50 AM	A76015
Bromobenzene	ND	2.8	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Bromodichloromethane	ND	2.0	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Bromoform	ND	3.1	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Bromomethane	ND	16	30		µg/L	10	3/18/2021 1:13:50 AM	A76015
2-Butanone	ND	11	100		µg/L	10	3/18/2021 1:13:50 AM	A76015
Carbon disulfide	ND	4.4	100		µg/L	10	3/18/2021 1:13:50 AM	A76015
Carbon Tetrachloride	ND	1.8	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Chlorobenzene	ND	1.4	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Chloroethane	ND	3.8	20		µg/L	10	3/18/2021 1:13:50 AM	A76015
Chloroform	ND	1.3	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Chloromethane	ND	4.0	30		µg/L	10	3/18/2021 1:13:50 AM	A76015
2-Chlorotoluene	ND	1.3	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
4-Chlorotoluene	ND	5.1	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
cis-1,2-DCE	ND	3.9	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	3/18/2021 1:13:50 AM	A76015
Dibromochloromethane	ND	2.8	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Dibromomethane	ND	3.1	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Dichlorodifluoromethane	ND	4.4	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,1-Dichloroethane	ND	2.7	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,1-Dichloroethene	ND	1.3	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,2-Dichloropropane	ND	1.3	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,3-Dichloropropane	ND	1.8	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
2,2-Dichloropropane	ND	2.6	20		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,1-Dichloropropene	ND	1.8	10		µg/L	10	3/18/2021 1:13:50 AM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix
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J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	3.3	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
2-Hexanone	ND	18	100		µg/L	10	3/18/2021 1:13:50 AM	A76015
Isopropylbenzene	ND	1.8	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
4-Isopropyltoluene	ND	2.0	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
4-Methyl-2-pentanone	ND	11	100		µg/L	10	3/18/2021 1:13:50 AM	A76015
Methylene Chloride	ND	4.0	30		µg/L	10	3/18/2021 1:13:50 AM	A76015
n-Butylbenzene	ND	2.5	30		µg/L	10	3/18/2021 1:13:50 AM	A76015
n-Propylbenzene	ND	1.8	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
sec-Butylbenzene	ND	6.1	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Styrene	ND	1.3	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
tert-Butylbenzene	ND	2.4	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	3/18/2021 1:13:50 AM	A76015
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
trans-1,2-DCE	ND	4.9	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,2,3-Trichlorobenzene	ND	1.3	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,1,2-Trichloroethane	ND	1.9	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Trichlorofluoromethane	ND	0.92	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	3/18/2021 1:13:50 AM	A76015
Vinyl chloride	ND	2.0	10		µg/L	10	3/18/2021 1:13:50 AM	A76015
Xylenes, Total	220	5.5	15		µg/L	10	3/18/2021 1:13:50 AM	A76015
Surr: 1,2-Dichloroethane-d4	94.1	0	70-130		%Rec	10	3/18/2021 1:13:50 AM	A76015
Surr: 4-Bromofluorobenzene	88.6	0	70-130		%Rec	10	3/18/2021 1:13:50 AM	A76015
Surr: Dibromofluoromethane	101	0	70-130		%Rec	10	3/18/2021 1:13:50 AM	A76015
Surr: Toluene-d8	81.2	0	70-130		%Rec	10	3/18/2021 1:13:50 AM	A76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	2.8	0.080	0.50		mg/L	10	3/18/2021 1:13:50 AM	B76015
Surr: BFB	95.1	0	70-130		%Rec	10	3/18/2021 1:13:50 AM	B76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-008B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0062	0.0094		µg/L	1	3/16/2021 7:31:11 PM	58711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-008C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	0.76	0.075	0.085		mg/L	1	3/23/2021 6:46:57 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 6:46:57 PM	58742
Surr: DNOP	90.5	0	45.1-141		%Rec	1	3/23/2021 6:46:57 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-008D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/11/2021 3:24:59 AM	A75861
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	3/11/2021 3:24:59 AM	A75861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-008E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.034	0.0056	0.020		mg/L	1	3/17/2021 10:53:17 AM	B75995
Barium	0.57	0.0011	0.0020		mg/L	1	3/17/2021 10:53:17 AM	B75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 10:53:17 AM	B75995
Boron	0.63	0.0067	0.040		mg/L	1	3/17/2021 10:53:17 AM	B75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 10:53:17 AM	B75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 10:53:17 AM	B75995
Cobalt	0.0073	0.0024	0.0060		mg/L	1	3/18/2021 9:46:08 AM	A76034
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 10:53:17 AM	B75995
Iron	0.37	0.010	0.020	*	mg/L	1	3/17/2021 10:53:17 AM	B75995
Manganese	1.5	0.0029	0.010	*	mg/L	5	3/17/2021 10:54:49 AM	B75995
Molybdenum	0.0069	0.0056	0.0080	J	mg/L	1	3/17/2021 10:53:17 AM	B75995
Nickel	0.086	0.0033	0.010		mg/L	1	3/18/2021 9:46:08 AM	A76034
Silver	0.0014	0.0013	0.0050	J	mg/L	1	3/17/2021 10:53:17 AM	B75995
Zinc	0.016	0.0060	0.010		mg/L	1	3/18/2021 9:46:08 AM	A76034
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 4:00:54 PM	A75953
Arsenic	0.0045	0.00021	0.0010		mg/L	1	3/15/2021 4:00:54 PM	A75953
Lead	0.00015	0.000034	0.00050	J	mg/L	1	3/15/2021 4:00:54 PM	A75953
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 4:00:54 PM	A75953
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 4:00:54 PM	A75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:24:16 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-56
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-008F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.63	0.0074	0.020	*	mg/L	1	3/14/2021 10:24:15 AM	58685
Barium	0.58	0.0016	0.0030		mg/L	1	3/14/2021 10:24:15 AM	58685
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 10:24:15 AM	58685
Boron	0.61	0.0074	0.040		mg/L	1	3/14/2021 10:24:15 AM	58685
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 10:24:15 AM	58685
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 10:24:15 AM	58685
Cobalt	0.0084	0.0024	0.0060		mg/L	1	3/14/2021 10:24:15 AM	58685
Copper	0.0061	0.0047	0.0060		mg/L	1	3/14/2021 10:24:15 AM	58685
Iron	1.3	0.064	0.25	*	mg/L	5	3/14/2021 10:25:36 AM	58685
Manganese	1.7	0.0041	0.010	*	mg/L	5	3/14/2021 10:25:36 AM	58685
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 10:24:15 AM	58685
Nickel	0.078	0.0033	0.010		mg/L	1	3/14/2021 10:24:15 AM	58685
Silver	0.0019	0.0013	0.0050	J	mg/L	1	3/16/2021 9:23:24 AM	58685
Zinc	ND	0.0064	0.010		mg/L	1	3/14/2021 10:24:15 AM	58685
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 12:15:12 PM	58685
Arsenic	0.0074	0.00026	0.0010		mg/L	1	3/15/2021 12:15:12 PM	58685
Lead	0.00087	0.000034	0.00050		mg/L	1	3/15/2021 12:15:12 PM	58685
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 12:15:12 PM	58685
Thallium	ND	0.00025	0.00025		mg/L	1	3/15/2021 12:15:12 PM	58685
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:35:47 PM	58746

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 10:45:00 AM
Lab ID: 2103532-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: **BRM**	
Benzene	26	0.45	2.0	D	µg/L	2	3/18/2021 2:53:45 PM	C76055
Toluene	1.5	0.40	2.0	JD	µg/L	2	3/18/2021 2:53:45 PM	C76055
Ethylbenzene	0.84	0.43	2.0	JD	µg/L	2	3/18/2021 2:53:45 PM	C76055
Methyl tert-butyl ether (MTBE)	3.9	0.79	2.0	D	µg/L	2	3/18/2021 2:53:45 PM	C76055
Xylenes, Total	12	1.1	3.0	D	µg/L	2	3/18/2021 2:53:45 PM	C76055
Surr: 1,2-Dichloroethane-d4	86.0	0	70-130	D	%Rec	2	3/18/2021 2:53:45 PM	C76055
Surr: 4-Bromofluorobenzene	85.8	0	70-130	D	%Rec	2	3/18/2021 2:53:45 PM	C76055
Surr: Dibromofluoromethane	86.9	0	70-130	D	%Rec	2	3/18/2021 2:53:45 PM	C76055
Surr: Toluene-d8	82.1	0	70-130	D	%Rec	2	3/18/2021 2:53:45 PM	C76055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.45	0.016	0.10	D	mg/L	2	3/18/2021 2:53:45 PM	B76055
Surr: BFB	97.2	0	70-130	D	%Rec	2	3/18/2021 2:53:45 PM	B76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 10:45:00 AM
Lab ID: 2103532-009B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	1.0	0.075	0.085		mg/L	1	3/23/2021 7:10:45 PM	58742
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 7:10:45 PM	58742
Surr: DNOP	98.0	0	45.1-141		%Rec	1	3/23/2021 7:10:45 PM	58742

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 10:45:00 AM
Lab ID: 2103532-009C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	11	0.048	1.0		µg/L	1	3/19/2021 9:49:00 PM	58709
Surr: 2-Fluorobiphenyl	57.0	0	21.1-110		%Rec	1	3/19/2021 9:49:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 10:45:00 AM
Lab ID: 2103532-009D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.67	0.0056	0.020	*	mg/L	1	3/17/2021 10:56:24 AM	B75995
Barium	0.093	0.0011	0.0020		mg/L	1	3/17/2021 10:56:24 AM	B75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 10:56:24 AM	B75995
Boron	0.016	0.0067	0.040	J	mg/L	1	3/17/2021 10:56:24 AM	B75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 10:56:24 AM	B75995
Chromium	0.063	0.0020	0.0060		mg/L	1	3/18/2021 9:47:42 AM	A76034
Cobalt	0.0081	0.0024	0.0060		mg/L	1	3/18/2021 9:47:42 AM	A76034
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 10:56:24 AM	B75995
Iron	5.5	0.10	0.20	*	mg/L	10	3/18/2021 9:49:03 AM	A76034
Manganese	1.8	0.0029	0.010	*	mg/L	5	3/17/2021 10:57:41 AM	B75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 10:56:24 AM	B75995
Nickel	0.21	0.0033	0.010	*	mg/L	1	3/18/2021 9:47:42 AM	A76034
Silver	0.0057	0.0013	0.0050		mg/L	1	3/18/2021 9:47:42 AM	A76034
Zinc	0.023	0.0060	0.010		mg/L	1	3/18/2021 9:47:42 AM	A76034
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 4:03:37 PM	A75953
Arsenic	0.00026	0.00021	0.0010	J	mg/L	1	3/15/2021 4:03:37 PM	A75953
Lead	ND	0.000034	0.00050		mg/L	1	3/15/2021 4:03:37 PM	A75953
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 4:03:37 PM	A75953
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 4:03:37 PM	A75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:26:40 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: West LDU
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 10:45:00 AM
Lab ID: 2103532-009E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.84	0.0074	0.020	*	mg/L	1	3/14/2021 10:27:10 AM	58685
Barium	0.098	0.0016	0.0030		mg/L	1	3/14/2021 10:27:10 AM	58685
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 10:27:10 AM	58685
Boron	0.014	0.0074	0.040	J	mg/L	1	3/14/2021 10:27:10 AM	58685
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 10:27:10 AM	58685
Chromium	0.099	0.0021	0.0060		mg/L	1	3/14/2021 10:27:10 AM	58685
Cobalt	0.0061	0.0024	0.0060		mg/L	1	3/14/2021 10:27:10 AM	58685
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 10:27:10 AM	58685
Iron	5.7	0.13	0.50	*	mg/L	10	3/14/2021 10:59:18 AM	58685
Manganese	1.9	0.0041	0.010	*	mg/L	5	3/14/2021 10:28:27 AM	58685
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 10:27:10 AM	58685
Nickel	0.22	0.0033	0.010	*	mg/L	1	3/14/2021 10:27:10 AM	58685
Silver	0.0083	0.0013	0.0050		mg/L	1	3/16/2021 10:49:17 AM	58685
Zinc	0.039	0.0064	0.010		mg/L	1	3/14/2021 10:27:10 AM	58685
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 12:17:35 PM	58685
Arsenic	0.00048	0.00026	0.0010	J	mg/L	1	3/15/2021 12:17:35 PM	58685
Lead	0.000093	0.000034	0.00050	J	mg/L	1	3/15/2021 12:17:35 PM	58685
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 12:17:35 PM	58685
Thallium	ND	0.00025	0.00025		mg/L	1	3/15/2021 12:17:35 PM	58685
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:38:12 PM	58746

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 10:55:00 AM
Lab ID: 2103532-010A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: **BRM**	
Benzene	200	2.3	10		µg/L	10	3/18/2021 3:21:03 PM	C76055
Toluene	29	2.0	10		µg/L	10	3/18/2021 3:21:03 PM	C76055
Ethylbenzene	39	2.1	10		µg/L	10	3/18/2021 3:21:03 PM	C76055
Methyl tert-butyl ether (MTBE)	6.1	3.9	10	J	µg/L	10	3/18/2021 3:21:03 PM	C76055
Xylenes, Total	56	5.5	15		µg/L	10	3/18/2021 3:21:03 PM	C76055
Surr: 1,2-Dichloroethane-d4	89.0	0	70-130		%Rec	10	3/18/2021 3:21:03 PM	C76055
Surr: 4-Bromofluorobenzene	85.6	0	70-130		%Rec	10	3/18/2021 3:21:03 PM	C76055
Surr: Dibromofluoromethane	88.9	0	70-130		%Rec	10	3/18/2021 3:21:03 PM	C76055
Surr: Toluene-d8	82.6	0	70-130		%Rec	10	3/18/2021 3:21:03 PM	C76055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	2.2	0.080	0.50		mg/L	10	3/18/2021 3:21:03 PM	B76055
Surr: BFB	95.5	0	70-130		%Rec	10	3/18/2021 3:21:03 PM	B76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 10:55:00 AM
Lab ID: 2103532-010B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	1.3	0.075	0.085		mg/L	1	3/23/2021 9:09:25 PM	58760
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 9:09:25 PM	58760
Surr: DNOP	89.8	0	45.1-141		%Rec	1	3/23/2021 9:09:25 PM	58760

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 10:55:00 AM
Lab ID: 2103532-010C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	6.1	0.11	0.40	*	mg/L	20	3/17/2021 11:41:38 AM	B75995
Barium	0.044	0.0011	0.0020		mg/L	1	3/17/2021 10:59:17 AM	B75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 10:59:17 AM	B75995
Boron	0.041	0.0067	0.040		mg/L	1	3/17/2021 10:59:17 AM	B75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 10:59:17 AM	B75995
Chromium	2.0	0.0098	0.030	*	mg/L	5	3/18/2021 9:51:57 AM	A76034
Cobalt	0.031	0.0024	0.0060		mg/L	1	3/18/2021 9:50:38 AM	A76034
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 10:59:17 AM	B75995
Iron	21	0.52	1.0	*	mg/L	50	3/18/2021 9:53:17 AM	A76034
Manganese	3.0	0.0029	0.010	*	mg/L	5	3/17/2021 11:00:38 AM	B75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 10:59:17 AM	B75995
Nickel	3.8	0.016	0.050	*	mg/L	5	3/18/2021 9:51:57 AM	A76034
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2021 10:59:17 AM	B75995
Zinc	0.24	0.0060	0.010		mg/L	1	3/18/2021 9:50:38 AM	A76034
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 4:06:19 PM	A75953
Arsenic	0.0026	0.0010	0.0050	J	mg/L	5	3/15/2021 7:04:01 PM	A75953
Lead	ND	0.000034	0.00050		mg/L	1	3/15/2021 4:06:19 PM	A75953
Selenium	ND	0.0033	0.0050		mg/L	5	3/15/2021 7:04:01 PM	A75953
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 4:06:19 PM	A75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:29:04 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: East LDU
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 10:55:00 AM
Lab ID: 2103532-010D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	7.1	0.15	0.40	*	mg/L	20	3/14/2021 11:00:56 AM	58685
Barium	0.047	0.0016	0.0030		mg/L	1	3/14/2021 10:30:05 AM	58685
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 10:30:05 AM	58685
Boron	0.029	0.0074	0.040	J	mg/L	1	3/14/2021 10:30:05 AM	58685
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 10:30:05 AM	58685
Chromium	2.0	0.011	0.030	*	mg/L	5	3/14/2021 10:31:22 AM	58685
Cobalt	0.030	0.0024	0.0060		mg/L	1	3/14/2021 10:30:05 AM	58685
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 10:30:05 AM	58685
Iron	20	0.64	2.5	*	mg/L	50	3/14/2021 11:09:57 AM	58685
Manganese	3.0	0.0041	0.010	*	mg/L	5	3/14/2021 10:31:22 AM	58685
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 10:30:05 AM	58685
Nickel	3.8	0.016	0.050	*	mg/L	5	3/14/2021 10:31:22 AM	58685
Silver	ND	0.0013	0.0050		mg/L	1	3/16/2021 9:26:08 AM	58685
Zinc	0.37	0.0064	0.010		mg/L	1	3/14/2021 10:30:05 AM	58685
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 12:24:50 PM	58685
Arsenic	0.0033	0.00026	0.0010		mg/L	1	3/15/2021 12:24:50 PM	58685
Lead	0.000068	0.000034	0.00050	J	mg/L	1	3/15/2021 12:24:50 PM	58685
Selenium	0.00074	0.00066	0.0010	J	mg/L	1	3/15/2021 12:24:50 PM	58685
Thallium	ND	0.00025	0.00025		mg/L	1	3/15/2021 12:24:50 PM	58685
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:40:36 PM	58746

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-011A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Toluene	ND	0.20	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Naphthalene	ND	0.28	2.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Acetone	ND	2.3	10		µg/L	1	3/18/2021 2:35:02 AM	A76015
Bromobenzene	ND	0.28	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Bromoform	ND	0.31	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Bromomethane	ND	1.6	3.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
2-Butanone	ND	1.1	10		µg/L	1	3/18/2021 2:35:02 AM	A76015
Carbon disulfide	ND	0.44	10		µg/L	1	3/18/2021 2:35:02 AM	A76015
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Chloroethane	ND	0.38	2.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Chloroform	ND	0.13	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Chloromethane	ND	0.40	3.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Dibromomethane	ND	0.31	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-011A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
2-Hexanone	ND	1.8	10		µg/L	1	3/18/2021 2:35:02 AM	A76015
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/18/2021 2:35:02 AM	A76015
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Styrene	ND	0.13	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/18/2021 2:35:02 AM	A76015
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/18/2021 2:35:02 AM	A76015
Surr: 1,2-Dichloroethane-d4	91.0	0	70-130		%Rec	1	3/18/2021 2:35:02 AM	A76015
Surr: 4-Bromofluorobenzene	85.4	0	70-130		%Rec	1	3/18/2021 2:35:02 AM	A76015
Surr: Dibromofluoromethane	95.3	0	70-130		%Rec	1	3/18/2021 2:35:02 AM	A76015
Surr: Toluene-d8	83.9	0	70-130		%Rec	1	3/18/2021 2:35:02 AM	A76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.016	0.0080	0.050	J	mg/L	1	3/18/2021 2:35:02 AM	B76015
Surr: BFB	94.4	0	70-130		%Rec	1	3/18/2021 2:35:02 AM	B76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-011B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0062	0.0094		µg/L	1	3/16/2021 7:46:05 PM	58711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-011C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	ND	0.075	0.085		mg/L	1	3/23/2021 9:33:02 PM	58760
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 9:33:02 PM	58760
Surr: DNOP	92.1	0	45.1-141		%Rec	1	3/23/2021 9:33:02 PM	58760

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-011D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Nitrogen, Nitrite (As N)	ND	0.014	0.10		mg/L	1	3/11/2021 3:50:43 AM	A75861
Nitrogen, Nitrate (As N)	ND	0.020	0.10		mg/L	1	3/11/2021 3:50:43 AM	A75861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-011E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 11:01:57 AM	B75995
Barium	ND	0.0011	0.0020		mg/L	1	3/17/2021 11:01:57 AM	B75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 11:01:57 AM	B75995
Boron	ND	0.0067	0.040		mg/L	1	3/17/2021 11:01:57 AM	B75995
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 11:01:57 AM	B75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 11:01:57 AM	B75995
Cobalt	ND	0.0024	0.0060		mg/L	1	3/17/2021 11:01:57 AM	B75995
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 11:01:57 AM	B75995
Iron	ND	0.010	0.020		mg/L	1	3/17/2021 11:01:57 AM	B75995
Manganese	ND	0.00058	0.0020		mg/L	1	3/17/2021 11:01:57 AM	B75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 11:01:57 AM	B75995
Nickel	ND	0.0033	0.010		mg/L	1	3/17/2021 11:01:57 AM	B75995
Silver	ND	0.0013	0.0050		mg/L	1	3/17/2021 11:01:57 AM	B75995
Zinc	0.019	0.0060	0.010		mg/L	1	3/18/2021 9:54:56 AM	A76034
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 4:09:04 PM	A75953
Arsenic	ND	0.00021	0.0010		mg/L	1	3/15/2021 4:09:04 PM	A75953
Lead	ND	0.000034	0.00050		mg/L	1	3/15/2021 4:09:04 PM	A75953
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 4:09:04 PM	A75953
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 4:09:04 PM	A75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:31:29 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 11:10:00 AM
Lab ID: 2103532-011F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	ND	0.0074	0.020		mg/L	1	3/16/2021 9:30:07 AM	A75962
Barium	ND	0.0016	0.0030		mg/L	1	3/16/2021 9:30:07 AM	A75962
Beryllium	ND	0.00088	0.0020		mg/L	1	3/16/2021 9:30:07 AM	A75962
Boron	ND	0.0074	0.040		mg/L	1	3/16/2021 9:30:07 AM	A75962
Cadmium	ND	0.0015	0.0020		mg/L	1	3/16/2021 9:30:07 AM	A75962
Chromium	ND	0.0021	0.0060		mg/L	1	3/16/2021 9:30:07 AM	A75962
Cobalt	ND	0.0024	0.0060		mg/L	1	3/16/2021 9:30:07 AM	A75962
Copper	ND	0.0047	0.0060		mg/L	1	3/16/2021 9:30:07 AM	A75962
Iron	ND	0.013	0.050		mg/L	1	3/16/2021 9:30:07 AM	A75962
Manganese	ND	0.00081	0.0020		mg/L	1	3/16/2021 9:30:07 AM	A75962
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/16/2021 9:30:07 AM	A75962
Nickel	ND	0.0033	0.010		mg/L	1	3/16/2021 9:30:07 AM	A75962
Silver	ND	0.0013	0.0050		mg/L	1	3/16/2021 9:30:07 AM	A75962
Zinc	ND	0.0064	0.010		mg/L	1	3/16/2021 9:30:07 AM	A75962
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 6:17:49 PM	C75953
Arsenic	ND	0.00026	0.0010		mg/L	1	3/15/2021 6:17:49 PM	C75953
Lead	ND	0.000034	0.00050		mg/L	1	3/15/2021 6:17:49 PM	C75953
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 6:17:49 PM	C75953
Thallium	ND	0.00025	0.00025		mg/L	1	3/15/2021 6:17:49 PM	C75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:43:01 PM	58746

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-EP
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:35:00 AM
Lab ID: 2103532-012A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Toluene	ND	0.20	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Naphthalene	ND	0.28	2.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Acetone	4.8	2.3	10	J	µg/L	1	3/18/2021 3:48:18 PM	A76055
Bromobenzene	ND	0.28	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Bromoform	ND	0.31	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Bromomethane	ND	1.6	3.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
2-Butanone	ND	1.1	10		µg/L	1	3/18/2021 3:48:18 PM	A76055
Carbon disulfide	ND	0.44	10		µg/L	1	3/18/2021 3:48:18 PM	A76055
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Chloroethane	ND	0.38	2.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Chloroform	ND	0.13	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Chloromethane	ND	0.40	3.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Dibromomethane	ND	0.31	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-EP
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:35:00 AM
Lab ID: 2103532-012A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
2-Hexanone	ND	1.8	10		µg/L	1	3/18/2021 3:48:18 PM	A76055
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/18/2021 3:48:18 PM	A76055
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Styrene	ND	0.13	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/18/2021 3:48:18 PM	A76055
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/18/2021 3:48:18 PM	A76055
Surr: 1,2-Dichloroethane-d4	89.1	0	70-130		%Rec	1	3/18/2021 3:48:18 PM	A76055
Surr: 4-Bromofluorobenzene	86.2	0	70-130		%Rec	1	3/18/2021 3:48:18 PM	A76055
Surr: Dibromofluoromethane	91.2	0	70-130		%Rec	1	3/18/2021 3:48:18 PM	A76055
Surr: Toluene-d8	81.9	0	70-130		%Rec	1	3/18/2021 3:48:18 PM	A76055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.020	0.0080	0.050	J	mg/L	1	3/18/2021 3:48:18 PM	B76055
Surr: BFB	94.9	0	70-130		%Rec	1	3/18/2021 3:48:18 PM	B76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-EP
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:35:00 AM
Lab ID: 2103532-012B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.42	0.075	0.085		mg/L	1	3/23/2021 9:56:40 PM	58760
Motor Oil Range Organics (MRO)	0.71	0.60	0.60		mg/L	1	3/23/2021 9:56:40 PM	58760
Surr: DNOP	84.6	0	45.1-141		%Rec	1	3/23/2021 9:56:40 PM	58760

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-EP
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:35:00 AM
Lab ID: 2103532-012C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: **AG**	
Biochemical Oxygen Demand	78	2.0	2.0		mg/L	1	3/16/2021 11:38:00 AM	58661

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-EP
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:35:00 AM
Lab ID: 2103532-012D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: **MH**	
Total Dissolved Solids	1930	200	200	*D	mg/L	1	3/17/2021 3:38:00 PM	58752
SM 2540D: TSS							Analyst: **KS**	
Suspended Solids	110	20	20	D	mg/L	1	3/11/2021 8:11:00 PM	58670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-EP
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:35:00 AM
Lab ID: 2103532-012E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.17	0.0056	0.020		mg/L	1	3/17/2021 11:19:54 AM	B75995
Barium	0.043	0.0011	0.0020		mg/L	1	3/17/2021 11:19:54 AM	B75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 11:19:54 AM	B75995
Boron	0.23	0.0067	0.040		mg/L	1	3/18/2021 10:07:10 AM	A76034
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 11:19:54 AM	B75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 11:19:54 AM	B75995
Cobalt	0.0038	0.0024	0.0060	J	mg/L	1	3/17/2021 11:19:54 AM	B75995
Copper	0.0052	0.0035	0.0060	J	mg/L	1	3/17/2021 11:19:54 AM	B75995
Iron	0.45	0.010	0.020	*	mg/L	1	3/17/2021 11:19:54 AM	B75995
Manganese	0.33	0.00058	0.0020	*	mg/L	1	3/17/2021 11:19:54 AM	B75995
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/17/2021 11:19:54 AM	B75995
Nickel	0.0076	0.0033	0.010	J	mg/L	1	3/18/2021 10:07:10 AM	A76034
Silver	0.0039	0.0013	0.0050	J	mg/L	1	3/17/2021 11:19:54 AM	B75995
Zinc	0.037	0.0060	0.010		mg/L	1	3/19/2021 8:24:01 AM	A76065
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.0013	0.00070	0.0010		mg/L	1	3/15/2021 4:11:47 PM	A75953
Arsenic	0.0028	0.00021	0.0010		mg/L	1	3/15/2021 4:11:47 PM	A75953
Lead	0.000043	0.000034	0.00050	J	mg/L	1	3/15/2021 4:11:47 PM	A75953
Selenium	0.00080	0.00066	0.0010	J	mg/L	1	3/15/2021 4:11:47 PM	A75953
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 4:11:47 PM	A75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:33:54 PM	58800

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: STP-EP
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 9:35:00 AM
Lab ID: 2103532-012F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.84	0.0074	0.020	*	mg/L	1	3/14/2021 10:41:33 AM	58685
Barium	0.050	0.0016	0.0030		mg/L	1	3/14/2021 10:41:33 AM	58685
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 10:41:33 AM	58685
Boron	0.21	0.0074	0.040		mg/L	1	3/14/2021 10:41:33 AM	58685
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 10:41:33 AM	58685
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 10:41:33 AM	58685
Cobalt	0.0062	0.0024	0.0060		mg/L	1	3/14/2021 10:41:33 AM	58685
Copper	0.027	0.0047	0.0060		mg/L	1	3/14/2021 10:41:33 AM	58685
Iron	1.7	0.064	0.25	*	mg/L	5	3/14/2021 10:42:53 AM	58685
Manganese	0.33	0.00081	0.0020	*	mg/L	1	3/14/2021 10:41:33 AM	58685
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/14/2021 10:41:33 AM	58685
Nickel	0.0056	0.0033	0.010	J	mg/L	1	3/14/2021 10:41:33 AM	58685
Silver	0.0054	0.0013	0.0050		mg/L	1	3/16/2021 10:50:37 AM	58685
Zinc	0.053	0.0064	0.010		mg/L	1	3/16/2021 9:27:26 AM	58685
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	0.0011	0.00070	0.0010		mg/L	1	3/15/2021 12:29:37 PM	58685
Arsenic	0.0035	0.00026	0.0010		mg/L	1	3/15/2021 12:29:37 PM	58685
Lead	0.00021	0.000034	0.00050	J	mg/L	1	3/15/2021 12:29:37 PM	58685
Selenium	0.0015	0.00066	0.0010		mg/L	1	3/15/2021 12:29:37 PM	58685
Thallium	ND	0.00025	0.00025		mg/L	1	3/15/2021 12:29:37 PM	58685
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:50:13 PM	58746

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021
Lab ID: 2103532-013A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	4600	23	100		µg/L	100	3/18/2021 4:15:36 PM	A76055
Toluene	260	1.0	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Ethylbenzene	220	1.1	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Methyl tert-butyl ether (MTBE)	49	2.0	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,2,4-Trimethylbenzene	100	0.61	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,3,5-Trimethylbenzene	23	0.91	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,2-Dichloroethane (EDC)	1.9	1.1	5.0	J	µg/L	5	3/18/2021 3:29:05 AM	A76015
1,2-Dibromoethane (EDB)	ND	1.5	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Naphthalene	17	1.4	10		µg/L	5	3/18/2021 3:29:05 AM	A76015
1-Methylnaphthalene	ND	4.2	20		µg/L	5	3/18/2021 3:29:05 AM	A76015
2-Methylnaphthalene	3.9	3.5	20	J	µg/L	5	3/18/2021 3:29:05 AM	A76015
Acetone	ND	12	50		µg/L	5	3/18/2021 3:29:05 AM	A76015
Bromobenzene	ND	1.4	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Bromodichloromethane	ND	1.0	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Bromoform	ND	1.6	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Bromomethane	ND	7.8	15		µg/L	5	3/18/2021 3:29:05 AM	A76015
2-Butanone	ND	5.6	50		µg/L	5	3/18/2021 3:29:05 AM	A76015
Carbon disulfide	ND	2.2	50		µg/L	5	3/18/2021 3:29:05 AM	A76015
Carbon Tetrachloride	ND	0.88	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Chlorobenzene	ND	0.68	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Chloroethane	23	1.9	10		µg/L	5	3/18/2021 3:29:05 AM	A76015
Chloroform	ND	0.67	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Chloromethane	ND	2.0	15		µg/L	5	3/18/2021 3:29:05 AM	A76015
2-Chlorotoluene	ND	0.66	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
4-Chlorotoluene	ND	2.6	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
cis-1,3-Dichloropropene	ND	1.8	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,2-Dibromo-3-chloropropane	ND	2.9	10		µg/L	5	3/18/2021 3:29:05 AM	A76015
Dibromochloromethane	ND	1.4	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Dibromomethane	ND	1.5	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,2-Dichlorobenzene	ND	0.77	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,3-Dichlorobenzene	ND	0.81	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,4-Dichlorobenzene	ND	1.0	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Dichlorodifluoromethane	ND	2.2	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,1-Dichloroethane	21	1.4	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,1-Dichloroethene	1.3	0.65	5.0	J	µg/L	5	3/18/2021 3:29:05 AM	A76015
1,2-Dichloropropane	ND	0.67	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,3-Dichloropropane	ND	0.90	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
2,2-Dichloropropane	ND	1.3	10		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,1-Dichloropropene	ND	0.90	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021
Lab ID: 2103532-013A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	1.6	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
2-Hexanone	ND	9.0	50		µg/L	5	3/18/2021 3:29:05 AM	A76015
Isopropylbenzene	7.5	0.91	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
4-Methyl-2-pentanone	ND	5.6	50		µg/L	5	3/18/2021 3:29:05 AM	A76015
Methylene Chloride	ND	2.0	15		µg/L	5	3/18/2021 3:29:05 AM	A76015
n-Butylbenzene	3.2	1.3	15	J	µg/L	5	3/18/2021 3:29:05 AM	A76015
n-Propylbenzene	10	0.91	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
sec-Butylbenzene	3.6	3.0	5.0	J	µg/L	5	3/18/2021 3:29:05 AM	A76015
Styrene	ND	0.65	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
tert-Butylbenzene	ND	1.2	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,1,1,2-Tetrachloroethane	ND	1.3	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,1,2,2-Tetrachloroethane	ND	1.4	10		µg/L	5	3/18/2021 3:29:05 AM	A76015
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
trans-1,2-DCE	ND	2.4	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
trans-1,3-Dichloropropene	ND	1.7	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,2,3-Trichlorobenzene	ND	0.67	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,2,4-Trichlorobenzene	ND	1.2	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,1,2-Trichloroethane	ND	0.94	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Trichlorofluoromethane	ND	0.46	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
1,2,3-Trichloropropane	ND	2.2	10		µg/L	5	3/18/2021 3:29:05 AM	A76015
Vinyl chloride	29	0.98	5.0		µg/L	5	3/18/2021 3:29:05 AM	A76015
Xylenes, Total	220	2.8	7.5		µg/L	5	3/18/2021 3:29:05 AM	A76015
Surr: 1,2-Dichloroethane-d4	87.6	0	70-130		%Rec	5	3/18/2021 3:29:05 AM	A76015
Surr: 4-Bromofluorobenzene	85.0	0	70-130		%Rec	5	3/18/2021 3:29:05 AM	A76015
Surr: Dibromofluoromethane	87.3	0	70-130		%Rec	5	3/18/2021 3:29:05 AM	A76015
Surr: Toluene-d8	84.0	0	70-130		%Rec	5	3/18/2021 3:29:05 AM	A76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	15	0.040	0.25		mg/L	5	3/18/2021 3:29:05 AM	B76015
Surr: BFB	92.4	0	70-130		%Rec	5	3/18/2021 3:29:05 AM	B76015

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021
Lab ID: 2103532-013B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.53	0.075	0.085		mg/L	1	3/23/2021 10:20:16 PM	58760
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 10:20:16 PM	58760
Surr: DNOP	94.6	0	45.1-141		%Rec	1	3/23/2021 10:20:16 PM	58760

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021
Lab ID: 2103532-013C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Azobenzene	ND	0.55	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Benzoic acid	ND	1.1	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Bis(2-ethylhexyl)phthalate	6.5	4.5	10	J	µg/L	1	3/18/2021 2:54:53 AM	58720
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Carbazole	4.4	0.56	5.0	J	µg/L	1	3/18/2021 2:54:53 AM	58720
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/18/2021 2:54:53 AM	58720
Di-n-octyl phthalate	9.3	3.1	10	J	µg/L	1	3/18/2021 2:54:53 AM	58720
Dibenzofuran	2.3	0.38	5.0	J	µg/L	1	3/18/2021 2:54:53 AM	58720
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Diethyl phthalate	ND	3.9	10		µg/L	1	3/18/2021 2:54:53 AM	58720
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/18/2021 2:54:53 AM	58720
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
2,4-Dimethylphenol	10	0.97	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Isophorone	ND	0.40	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
2-Methylphenol	23	0.51	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
3+4-Methylphenol	15	0.45	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021
Lab ID: 2103532-013C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Phenol	110	0.33	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Pyridine	ND	0.93	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/18/2021 2:54:53 AM	58720
Surr: 2-Fluorophenol	0	0	15-88.8	S	%Rec	1	3/18/2021 2:54:53 AM	58720
Surr: Phenol-d5	49.4	0	15-71.9		%Rec	1	3/18/2021 2:54:53 AM	58720
Surr: 2,4,6-Tribromophenol	71.6	0	15-97.4		%Rec	1	3/18/2021 2:54:53 AM	58720
Surr: Nitrobenzene-d5	67.9	0	15-117		%Rec	1	3/18/2021 2:54:53 AM	58720
Surr: 2-Fluorobiphenyl	67.4	0	15-100		%Rec	1	3/18/2021 2:54:53 AM	58720
Surr: 4-Terphenyl-d14	106	0	15-120		%Rec	1	3/18/2021 2:54:53 AM	58720
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	16	0.34	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
1-Methylnaphthalene	4.4	0.24	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
2-Methylnaphthalene	5.4	0.34	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Acenaphthylene	ND	0.43	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Acenaphthene	ND	0.31	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Fluorene	1.4	0.31	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Phenanthrene	ND	0.57	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Anthracene	ND	0.34	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Fluoranthene	ND	1.0	2.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Pyrene	ND	1.6	2.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Chrysene	ND	0.24	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Benzo(b)fluoranthene	ND	0.57	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Benzo(k)fluoranthene	ND	0.36	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Benzo(a)pyrene	ND	0.34	0.70	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Dibenz(a,h)anthracene	ND	0.34	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Benzo(g,h,i)perylene	ND	0.34	1.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Indeno(1,2,3-cd)pyrene	ND	0.43	3.0	D	µg/L	10	3/19/2021 10:33:00 PM	58709
Surr: Nitrobenzene-d5	0	0	26.3-112	SD	%Rec	10	3/19/2021 10:33:00 PM	58709
Surr: 2-Fluorobiphenyl	0	0	21.1-110	SD	%Rec	10	3/19/2021 10:33:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021
Lab ID: 2103532-013C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	0	0	17.6-167	SD	%Rec	10	3/19/2021 10:33:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021
Lab ID: 2103532-013D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/17/2021 11:22:54 AM	B75995
Barium	3.1	0.0056	0.010	*	mg/L	5	3/17/2021 11:24:13 AM	B75995
Beryllium	ND	0.00088	0.0020		mg/L	1	3/17/2021 11:22:54 AM	B75995
Boron	0.60	0.0067	0.040		mg/L	1	3/18/2021 10:08:44 AM	A76034
Cadmium	ND	0.0012	0.0020		mg/L	1	3/17/2021 11:22:54 AM	B75995
Calcium	310	0.57	5.0		mg/L	5	3/17/2021 11:24:13 AM	B75995
Chromium	ND	0.0020	0.0060		mg/L	1	3/17/2021 11:22:54 AM	B75995
Cobalt	0.010	0.0024	0.0060		mg/L	1	3/18/2021 10:08:44 AM	A76034
Copper	ND	0.0035	0.0060		mg/L	1	3/17/2021 11:22:54 AM	B75995
Iron	5.9	0.10	0.20	*	mg/L	10	3/18/2021 10:10:05 AM	A76034
Magnesium	82	0.067	1.0		mg/L	1	3/17/2021 11:22:54 AM	B75995
Manganese	5.4	0.0058	0.020	*	mg/L	10	3/18/2021 10:10:05 AM	A76034
Molybdenum	0.036	0.0056	0.0080		mg/L	1	3/17/2021 11:22:54 AM	B75995
Nickel	0.033	0.0033	0.010		mg/L	1	3/18/2021 10:08:44 AM	A76034
Potassium	1.7	0.16	1.0		mg/L	1	3/17/2021 11:22:54 AM	B75995
Silver	0.0039	0.0013	0.0050	J	mg/L	1	3/17/2021 11:22:54 AM	B75995
Sodium	1000	2.7	20		mg/L	20	3/17/2021 11:43:06 AM	B75995
Zinc	0.026	0.0060	0.010		mg/L	1	3/19/2021 8:25:35 AM	A76065
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/15/2021 7:06:44 PM	A75953
Arsenic	0.0092	0.0010	0.0050		mg/L	5	3/15/2021 7:06:44 PM	A75953
Lead	ND	0.00017	0.0025		mg/L	5	3/15/2021 7:06:44 PM	A75953
Selenium	ND	0.0033	0.0050		mg/L	5	3/15/2021 7:06:44 PM	A75953
Thallium	ND	0.00017	0.0025		mg/L	5	3/15/2021 7:06:44 PM	A75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:36:19 PM	58801

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021
Lab ID: 2103532-013E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	1.4	0.037	0.10	*	mg/L	5	3/14/2021 10:45:37 AM	58685
Barium	3.4	0.0082	0.015	*	mg/L	5	3/14/2021 10:45:37 AM	58685
Beryllium	ND	0.00088	0.0020		mg/L	1	3/14/2021 10:44:27 AM	58685
Boron	0.59	0.0074	0.040		mg/L	1	3/14/2021 10:44:27 AM	58685
Cadmium	ND	0.0015	0.0020		mg/L	1	3/14/2021 10:44:27 AM	58685
Chromium	ND	0.0021	0.0060		mg/L	1	3/14/2021 10:44:27 AM	58685
Cobalt	0.013	0.0024	0.0060		mg/L	1	3/14/2021 10:44:27 AM	58685
Copper	ND	0.0047	0.0060		mg/L	1	3/14/2021 10:44:27 AM	58685
Iron	9.7	0.26	1.0	*	mg/L	20	3/14/2021 11:02:34 AM	58685
Manganese	6.0	0.016	0.040	*	mg/L	20	3/14/2021 11:02:34 AM	58685
Molybdenum	0.037	0.0065	0.0080		mg/L	1	3/14/2021 10:44:27 AM	58685
Nickel	0.028	0.0033	0.010		mg/L	1	3/14/2021 10:44:27 AM	58685
Silver	0.0051	0.0013	0.0050		mg/L	1	3/16/2021 10:51:59 AM	58685
Zinc	0.013	0.0064	0.010		mg/L	1	3/16/2021 9:28:49 AM	58685
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 12:32:00 PM	58685
Arsenic	0.014	0.0013	0.0050	*	mg/L	5	3/15/2021 1:14:45 PM	58685
Lead	0.00083	0.00017	0.0025	J	mg/L	5	3/15/2021 1:14:45 PM	58685
Selenium	ND	0.0033	0.0050		mg/L	5	3/15/2021 1:14:45 PM	58685
Thallium	ND	0.0012	0.0012		mg/L	5	3/15/2021 1:14:45 PM	58685
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/16/2021 6:57:18 PM	58746

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-10-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021
Lab ID: 2103532-013F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.84	0.22	0.50		mg/L	5	3/11/2021 5:58:53 PM	R75889
Chloride	1800	50	100	*	mg/L	200	3/12/2021 10:20:27 AM	R75905
Nitrogen, Nitrite (As N)	ND	0.28	2.0		mg/L	20	3/11/2021 6:11:46 PM	R75889
Bromide	0.90	0.25	0.50		mg/L	5	3/11/2021 5:58:53 PM	R75889
Nitrogen, Nitrate (As N)	0.26	0.10	0.50	J	mg/L	5	3/11/2021 5:58:53 PM	R75889
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/11/2021 5:58:53 PM	R75889
Sulfate	43	1.2	2.5		mg/L	5	3/11/2021 5:58:53 PM	R75889

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 1st Quarter
Collection Date:
Lab ID: 2103532-014A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/22/2021 4:13:14 PM	R76128
Toluene	ND	0.20	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Naphthalene	ND	0.28	2.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Acetone	ND	2.3	10		µg/L	1	3/18/2021 3:56:04 AM	A76015
Bromobenzene	ND	0.28	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Bromoform	ND	0.31	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Bromomethane	ND	1.6	3.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
2-Butanone	ND	1.1	10		µg/L	1	3/18/2021 3:56:04 AM	A76015
Carbon disulfide	ND	0.44	10		µg/L	1	3/18/2021 3:56:04 AM	A76015
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Chloroethane	ND	0.38	2.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Chloroform	ND	0.13	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Chloromethane	ND	0.40	3.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Dibromomethane	ND	0.31	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 1st Quarter
Collection Date:
Lab ID: 2103532-014A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
2-Hexanone	ND	1.8	10		µg/L	1	3/18/2021 3:56:04 AM	A76015
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/18/2021 3:56:04 AM	A76015
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Styrene	ND	0.13	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/18/2021 3:56:04 AM	A76015
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/18/2021 3:56:04 AM	A76015
Surr: 1,2-Dichloroethane-d4	88.1	0	70-130		%Rec	1	3/18/2021 3:56:04 AM	A76015
Surr: 4-Bromofluorobenzene	86.4	0	70-130		%Rec	1	3/18/2021 3:56:04 AM	A76015
Surr: Dibromofluoromethane	91.0	0	70-130		%Rec	1	3/18/2021 3:56:04 AM	A76015
Surr: Toluene-d8	86.2	0	70-130		%Rec	1	3/18/2021 3:56:04 AM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103532**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 1st Quarter
Collection Date:
Lab ID: 2103532-014B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0062	0.0094		µg/L	1	3/16/2021 8:00:58 PM	58711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Pace Analytical®

ANALYTICAL REPORT

March 19, 2021

Hall Environmental Analysis Laboratory

Sample Delivery Group:	L1326246
Samples Received:	03/12/2021
Project Number:	
Description:	

Report To: Jackie Bolte
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

2103532-012G STP-EP L1326246-01 WW

			Collected by	Collected date/time	Received date/time
				03/10/21 09:35	03/12/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 410.4	WG1636311	1	03/18/21 14:00	03/18/21 17:57	BJD	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
COD	355000		11700	20000	1	03/18/2021 17:57	WG1636311

Method Blank (MB)

(MB) R3632395-1 03/18/21 17:56

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
COD	U		11700	20000

L1326174-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1326174-01 03/18/21 17:56 • (DUP) R3632395-3 03/18/21 17:56

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	230000	228000	1	1.07		20

L1328148-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1328148-02 03/18/21 17:59 • (DUP) R3632395-4 03/18/21 17:59

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	215000	215000	1	0.181		20

Laboratory Control Sample (LCS)

(LCS) R3632395-2 03/18/21 17:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
COD	500000	493000	98.5	90.0-110	

L1328148-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1328148-03 03/18/21 18:00 • (MS) R3632395-5 03/18/21 18:00 • (MSD) R3632395-6 03/18/21 18:00

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
COD	500000	126000	599000	596000	94.5	94.0	1	80.0-120			0.447	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

M072

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR: Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			1326246

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2103532-012G	STP-EP	500HDPEH2 SO4	Aqueous	3/10/2021 9:35:00 AM	1	COD- Lv. 4 J/MDL -Due 3/24 -01

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

FED-EX 1749 9998 4220

Relinquished By: SGL	Date: 3/11/2021	Time: 2:32 PM	Received By: Ellen Ebe	Date: 3/12/21	Time: 9am
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 0.3+0.3=0.6 °C Attempt to Cool ?

Comments: cool

OK

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS-58685**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **58685**	RunNo: **75919**
Prep Date: **3/11/2021**	Analysis Date: **3/13/2021**	SeqNo: **2686383** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	103	85	115			
Barium	0.50	0.0030	0.5000	0	99.6	85	115			
Beryllium	0.51	0.0020	0.5000	0	101	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.5	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.6	85	115			
Copper	0.47	0.0060	0.5000	0	94.2	85	115			
Iron	0.49	0.050	0.5000	0	98.2	85	115			
Manganese	0.47	0.0020	0.5000	0	94.6	85	115			
Molybdenum	0.50	0.0080	0.5000	0	100	85	115			
Nickel	0.48	0.010	0.5000	0	96.3	85	115			
Silver	0.10	0.0050	0.1000	0	99.8	85	115			
Zinc	0.49	0.010	0.5000	0	98.7	85	115			

Sample ID: **MB-58685**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **58685**	RunNo: **75919**
Prep Date: **3/11/2021**	Analysis Date: **3/13/2021**	SeqNo: **2686404** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS-58685**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **58685**	RunNo: **75919**
Prep Date: **3/11/2021**	Analysis Date: **3/13/2021**	SeqNo: **2686407** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LLLCS-58685** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **58685** RunNo: **75919**
Prep Date: **3/11/2021** Analysis Date: **3/13/2021** SeqNo: **2686407** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.011	0.020	0.01000	0	113	50	150			J
Barium	0.0020	0.0030	0.002000	0	102	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	106	50	150			
Boron	0.040	0.040	0.04000	0	99.5	50	150			J
Cadmium	0.0018	0.0020	0.002000	0	90.8	50	150			J
Chromium	0.0066	0.0060	0.006000	0	111	50	150			
Cobalt	0.0060	0.0060	0.006000	0	99.5	50	150			J
Copper	0.0057	0.0060	0.006000	0	94.9	50	150			J
Iron	0.022	0.050	0.02000	0	108	50	150			J
Manganese	0.0020	0.0020	0.002000	0	102	50	150			
Molybdenum	0.0075	0.0080	0.008000	0	93.7	50	150			J
Nickel	0.0058	0.010	0.005000	0	117	50	150			J
Silver	0.0051	0.0050	0.005000	0	103	50	150			
Zinc	0.010	0.010	0.01000	0	102	50	150			

Sample ID: **2103532-002FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **STP-1-NW** Batch ID: **58685** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686807** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.60	0.0030	0.5000	0.1303	94.8	70	130			
Beryllium	0.50	0.0020	0.5000	0	101	70	130			
Cadmium	0.46	0.0020	0.5000	0	92.2	70	130			
Chromium	0.48	0.0060	0.5000	0	96.6	70	130			
Cobalt	0.46	0.0060	0.5000	0.005561	90.6	70	130			
Copper	0.53	0.0060	0.5000	0.005477	105	70	130			
Manganese	0.52	0.0020	0.5000	0.05242	93.2	70	130			
Molybdenum	0.50	0.0080	0.5000	0.01675	96.7	70	130			
Nickel	0.45	0.010	0.5000	0	89.2	70	130			
Silver	0.11	0.0050	0.1000	0.002267	107	70	130			
Zinc	0.49	0.010	0.5000	0.02206	94.0	70	130			

Sample ID: **2103532-002FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **STP-1-NW** Batch ID: **58685** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686808** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.58	0.0030	0.5000	0.1303	89.1	70	130	4.85	20	
Beryllium	0.48	0.0020	0.5000	0	96.6	70	130	4.12	20	
Cadmium	0.43	0.0020	0.5000	0	86.6	70	130	6.24	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103532-002FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **STP-1-NW** Batch ID: **58685** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686808** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.45	0.0060	0.5000	0	90.5	70	130	6.61	20	
Cobalt	0.43	0.0060	0.5000	0.005561	84.6	70	130	6.70	20	
Copper	0.49	0.0060	0.5000	0.005477	96.9	70	130	7.89	20	
Manganese	0.49	0.0020	0.5000	0.05242	87.3	70	130	5.86	20	
Molybdenum	0.46	0.0080	0.5000	0.01675	89.4	70	130	7.60	20	
Nickel	0.42	0.010	0.5000	0	83.2	70	130	7.02	20	
Silver	0.10	0.0050	0.1000	0.002267	98.9	70	130	7.27	20	
Zinc	0.46	0.010	0.5000	0.02206	88.0	70	130	6.20	20	

Sample ID: **2103532-002FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **STP-1-NW** Batch ID: **58685** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686810** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	2.8	0.20	0.5000	2.354	93.5	70	130			

Sample ID: **2103532-002FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **STP-1-NW** Batch ID: **58685** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686811** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	2.8	0.20	0.5000	2.354	90.9	70	130	0.469	20	

Sample ID: **2103532-003FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-50** Batch ID: **58685** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686815** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.50	0.0020	0.5000	0	100	70	130			
Cadmium	0.47	0.0020	0.5000	0	93.8	70	130			
Chromium	0.48	0.0060	0.5000	0	97.0	70	130			
Cobalt	0.46	0.0060	0.5000	0.005365	91.9	70	130			
Copper	0.51	0.0060	0.5000	0	103	70	130			
Molybdenum	0.49	0.0080	0.5000	0	98.3	70	130			
Nickel	0.46	0.010	0.5000	0.008346	90.6	70	130			
Silver	0.10	0.0050	0.1000	0.003462	98.4	70	130			
Zinc	0.48	0.010	0.5000	0	95.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103532-003FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-50** Batch ID: **58685** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686816** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.54	0.0020	0.5000	0	109	70	130	8.14	20	
Cadmium	0.50	0.0020	0.5000	0	99.9	70	130	6.23	20	
Chromium	0.52	0.0060	0.5000	0	104	70	130	6.70	20	
Cobalt	0.50	0.0060	0.5000	0.005365	98.4	70	130	6.75	20	
Copper	0.55	0.0060	0.5000	0	110	70	130	6.94	20	
Molybdenum	0.52	0.0080	0.5000	0	104	70	130	6.02	20	
Nickel	0.49	0.010	0.5000	0.008346	96.8	70	130	6.45	20	
Silver	0.11	0.0050	0.1000	0.003462	104	70	130	5.31	20	
Zinc	0.51	0.010	0.5000	0	102	70	130	7.20	20	

Sample ID: **2103532-003FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-50** Batch ID: **58685** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686818** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	2.6	0.10	0.5000	0.5672	411	70	130			S
Barium	3.6	0.015	0.5000	3.310	57.0	70	130			S
Boron	1.4	0.20	0.5000	0.9778	89.6	70	130			
Iron	3.0	0.25	0.5000	2.050	180	70	130			S
Manganese	2.8	0.010	0.5000	2.512	56.2	70	130			S

Sample ID: **2103532-003FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-50** Batch ID: **58685** RunNo: **75927**
Prep Date: **3/11/2021** Analysis Date: **3/14/2021** SeqNo: **2686819** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	2.8	0.10	0.5000	0.5672	444	70	130	6.01	20	S
Barium	3.7	0.015	0.5000	3.310	83.4	70	130	3.61	20	
Boron	1.5	0.20	0.5000	0.9778	102	70	130	4.24	20	
Iron	3.1	0.25	0.5000	2.050	200	70	130	3.31	20	S
Manganese	2.9	0.010	0.5000	2.512	78.2	70	130	3.86	20	

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A75962** RunNo: **75962**
Prep Date: Analysis Date: **3/16/2021** SeqNo: **2688214** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A75962** RunNo: **75962**
Prep Date: Analysis Date: **3/16/2021** SeqNo: **2688214** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **A75962** RunNo: **75962**
Prep Date: Analysis Date: **3/16/2021** SeqNo: **2688215** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.0097	0.020	0.01000	0	97.1	50	150			J
Barium	0.0017	0.0030	0.002000	0	84.0	50	150			J
Beryllium	0.0020	0.0020	0.002000	0	98.3	50	150			J
Boron	0.037	0.040	0.04000	0	92.9	50	150			J
Cadmium	0.0019	0.0020	0.002000	0	96.0	50	150			J
Chromium	0.0061	0.0060	0.006000	0	102	50	150			
Cobalt	0.0050	0.0060	0.006000	0	82.6	50	150			J
Copper	0.0038	0.0060	0.006000	0	63.4	50	150			J
Iron	0.020	0.050	0.02000	0	99.2	50	150			J
Manganese	0.0016	0.0020	0.002000	0	81.3	50	150			J
Molybdenum	0.0074	0.0080	0.008000	0	92.5	50	150			J
Nickel	0.0079	0.010	0.005000	0	158	50	150			JS
Silver	0.0039	0.0050	0.005000	0	77.3	50	150			J
Zinc	0.0089	0.010	0.01000	0	88.6	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A75962** RunNo: **75962**
Prep Date: Analysis Date: **3/16/2021** SeqNo: **2688216** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	105	85	115			
Barium	0.50	0.0030	0.5000	0	100	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A75962** RunNo: **75962**
Prep Date: Analysis Date: **3/16/2021** SeqNo: **2688216** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.52	0.040	0.5000	0	103	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.7	85	115			
Copper	0.48	0.0060	0.5000	0	96.9	85	115			
Iron	0.50	0.050	0.5000	0	99.9	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.48	0.010	0.5000	0	96.4	85	115			
Silver	0.095	0.0050	0.1000	0	94.8	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689796** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689798** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.011	0.020	0.01000	0	109	50	150			J
Barium	0.0021	0.0030	0.002000	0	103	50	150			J
Beryllium	0.0013	0.0020	0.002000	0	66.7	50	150			J
Boron	0.039	0.040	0.04000	0	97.6	50	150			J
Cadmium	0.0019	0.0020	0.002000	0	95.1	50	150			J
Calcium	0.54	1.0	0.5000	0	108	50	150			J
Chromium	0.0055	0.0060	0.006000	0	91.8	50	150			J
Cobalt	0.0079	0.0060	0.006000	0	131	50	150			
Copper	0.0064	0.0060	0.006000	0	106	50	150			
Iron	0.024	0.050	0.02000	0	121	50	150			J
Magnesium	0.54	1.0	0.5000	0	109	50	150			J
Manganese	0.0022	0.0020	0.002000	0	108	50	150			
Molybdenum	0.0077	0.0080	0.008000	0	96.7	50	150			J
Nickel	0.0036	0.010	0.005000	0	71.5	50	150			J
Potassium	0.47	1.0	0.5000	0	93.1	50	150			J
Silver	0.0045	0.0050	0.005000	0	89.5	50	150			J
Sodium	0.54	1.0	0.5000	0	107	50	150			J
Zinc	0.0090	0.010	0.01000	0	90.0	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689800** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	112	85	115			
Barium	0.52	0.0030	0.5000	0	104	85	115			
Beryllium	0.52	0.0020	0.5000	0	103	85	115			
Boron	0.52	0.040	0.5000	0	105	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Calcium	51	1.0	50.00	0	102	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.2	85	115			
Copper	0.50	0.0060	0.5000	0	100	85	115			
Iron	0.52	0.050	0.5000	0	104	85	115			
Magnesium	52	1.0	50.00	0	105	85	115			
Manganese	0.51	0.0020	0.5000	0	101	85	115			
Molybdenum	0.52	0.0080	0.5000	0	104	85	115			
Nickel	0.49	0.010	0.5000	0	97.6	85	115			
Potassium	50	1.0	50.00	0	101	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**							
Client ID: **LCSW**	Batch ID: **A75995**	RunNo: **75995**							
Prep Date:	Analysis Date: **3/17/2021**	SeqNo: **2689800**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.093	0.0050	0.1000	0	93.5	85	115			
Sodium	52	1.0	50.00	0	104	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689797** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689799** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.011	0.020	0.01000	0	109	50	150			J
Barium	0.0021	0.0020	0.002000	0	103	50	150			
Beryllium	0.0013	0.0020	0.002000	0	66.7	50	150			J
Boron	0.039	0.040	0.04000	0	97.6	50	150			J
Cadmium	0.0019	0.0020	0.002000	0	95.1	50	150			J
Calcium	0.54	1.0	0.5000	0	108	50	150			J
Chromium	0.0055	0.0060	0.006000	0	91.8	50	150			J
Cobalt	0.0079	0.0060	0.006000	0	131	50	150			
Copper	0.0064	0.0060	0.006000	0	106	50	150			
Iron	0.024	0.020	0.02000	0	121	50	150			
Magnesium	0.54	1.0	0.5000	0	109	50	150			J
Manganese	0.0022	0.0020	0.002000	0	108	50	150			
Molybdenum	0.0077	0.0080	0.008000	0	96.7	50	150			J
Nickel	0.0036	0.010	0.005000	0	71.5	50	150			J
Potassium	0.47	1.0	0.5000	0	93.1	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689799** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.0045	0.0050	0.005000	0	89.5	50	150			J
Sodium	0.54	1.0	0.5000	0	107	50	150			J
Zinc	0.0090	0.010	0.01000	0	90.0	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689801** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	112	85	115			
Barium	0.52	0.0020	0.5000	0	104	85	115			
Beryllium	0.52	0.0020	0.5000	0	103	85	115			
Boron	0.52	0.040	0.5000	0	105	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Calcium	51	1.0	50.00	0	102	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.2	85	115			
Copper	0.50	0.0060	0.5000	0	100	85	115			
Iron	0.52	0.020	0.5000	0	104	85	115			
Magnesium	52	1.0	50.00	0	105	85	115			
Manganese	0.51	0.0020	0.5000	0	101	85	115			
Molybdenum	0.52	0.0080	0.5000	0	104	85	115			
Nickel	0.49	0.010	0.5000	0	97.6	85	115			
Potassium	50	1.0	50.00	0	101	85	115			
Silver	0.093	0.0050	0.1000	0	93.5	85	115			
Sodium	52	1.0	50.00	0	104	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689802** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689802** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689803** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.010	0.020	0.01000	0	104	50	150			J
Barium	0.0016	0.0020	0.002000	0	79.5	50	150			J
Beryllium	0.0013	0.0020	0.002000	0	65.1	50	150			J
Boron	0.040	0.040	0.04000	0	100	50	150			
Cadmium	0.0017	0.0020	0.002000	0	85.2	50	150			J
Calcium	0.56	1.0	0.5000	0	113	50	150			J
Chromium	0.0046	0.0060	0.006000	0	77.4	50	150			J
Cobalt	0.0069	0.0060	0.006000	0	115	50	150			
Copper	0.0068	0.0060	0.006000	0	113	50	150			
Iron	0.021	0.020	0.02000	0	103	50	150			
Magnesium	0.56	1.0	0.5000	0	112	50	150			J
Manganese	0.0022	0.0020	0.002000	0	112	50	150			
Molybdenum	0.0079	0.0080	0.008000	0	99.0	50	150			J
Nickel	0.0037	0.010	0.005000	0	74.5	50	150			J
Potassium	0.51	1.0	0.5000	0	102	50	150			J
Silver	0.0040	0.0050	0.005000	0	79.6	50	150			J
Sodium	0.54	1.0	0.5000	0	107	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689804** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.53	0.0020	0.5000	0	105	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689804** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Boron	0.53	0.040	0.5000	0	106	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Calcium	53	1.0	50.00	0	105	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.9	85	115			
Copper	0.52	0.0060	0.5000	0	105	85	115			
Iron	0.52	0.020	0.5000	0	103	85	115			
Magnesium	54	1.0	50.00	0	107	85	115			
Manganese	0.52	0.0020	0.5000	0	103	85	115			
Molybdenum	0.52	0.0080	0.5000	0	105	85	115			
Nickel	0.49	0.010	0.5000	0	98.2	85	115			
Potassium	52	1.0	50.00	0	105	85	115			
Silver	0.095	0.0050	0.1000	0	95.1	85	115			
Sodium	53	1.0	50.00	0	107	85	115			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689890** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.48	0.020	0.5000	0	95.0	85	115			

Sample ID: **2103532-011EMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-10-21** Batch ID: **B75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689898** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.50	0.020	0.5000	0	100	70	130			
Barium	0.54	0.0020	0.5000	0	107	70	130			
Beryllium	0.54	0.0020	0.5000	0	107	70	130			
Boron	0.57	0.040	0.5000	0	115	70	130			
Copper	0.47	0.0060	0.5000	0	93.9	70	130			
Iron	0.54	0.020	0.5000	0	108	70	130			
Manganese	0.50	0.0020	0.5000	0	100	70	130			
Molybdenum	0.54	0.0080	0.5000	0	107	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103532-011EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-10-21** Batch ID: **B75995** RunNo: **75995**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2689899** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	107	70	130	6.20	20	
Barium	0.57	0.0020	0.5000	0	114	70	130	6.21	20	
Beryllium	0.57	0.0020	0.5000	0	113	70	130	5.79	20	
Boron	0.61	0.040	0.5000	0	123	70	130	6.55	20	
Copper	0.50	0.0060	0.5000	0	99.7	70	130	5.99	20	
Iron	0.56	0.020	0.5000	0	112	70	130	4.37	20	
Manganese	0.54	0.0020	0.5000	0	107	70	130	6.73	20	
Molybdenum	0.57	0.0080	0.5000	0	114	70	130	6.04	20	

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A76034** RunNo: **76034**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2691454** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A76034** RunNo: **76034**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2691455** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.040	0.040	0.04000	0	99.0	50	150			J
Chromium	0.0050	0.0060	0.006000	0	83.7	50	150			J
Cobalt	0.0057	0.0060	0.006000	0	95.7	50	150			J
Iron	0.022	0.020	0.02000	0	109	50	150			
Manganese	0.0020	0.0020	0.002000	0	98.5	50	150			J
Nickel	0.0062	0.010	0.005000	0	123	50	150			J
Silver	0.0048	0.0050	0.005000	0	95.6	50	150			J
Zinc	0.012	0.010	0.01000	0	119	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A76034** RunNo: **76034**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2691456** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.51	0.040	0.5000	0	102	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.4	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.48	0.0020	0.5000	0	96.9	85	115			
Nickel	0.47	0.010	0.5000	0	94.1	85	115			
Silver	0.097	0.0050	0.1000	0	97.4	85	115			
Zinc	0.49	0.010	0.5000	0	97.7	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A76065** RunNo: **76065**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2692634** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A76065** RunNo: **76065**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2692635** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.0097	0.010	0.01000	0	96.9	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A76065** RunNo: **76065**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2692636** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.49	0.010	0.5000	0	98.6	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58685** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **58685** RunNo: **75946**
Prep Date: **3/11/2021** Analysis Date: **3/15/2021** SeqNo: **2687504** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00012	0.0010								J
Arsenic	0.000012	0.0010								J
Lead	0.000016	0.00050								J
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: **MSLLLCS-58685** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **58685** RunNo: **75946**
Prep Date: **3/11/2021** Analysis Date: **3/15/2021** SeqNo: **2687505** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	112	50	150			
Arsenic	0.00098	0.0010	0.001000	0	97.8	50	150			J
Lead	0.00050	0.00050	0.0005000	0	99.2	50	150			J
Selenium	0.0010	0.0010	0.001000	0	102	50	150			

Sample ID: **MSLCS-58685** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **58685** RunNo: **75946**
Prep Date: **3/11/2021** Analysis Date: **3/15/2021** SeqNo: **2687506** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.9	85	115			
Lead	0.012	0.00050	0.01250	0	96.8	85	115			
Selenium	0.026	0.0010	0.02500	0	104	85	115			
Thallium	0.012	0.00025	0.01250	0	96.4	85	115			

Sample ID: **MSLLLCS-TL-58685** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **58685** RunNo: **75946**
Prep Date: **3/11/2021** Analysis Date: **3/15/2021** SeqNo: **2687507** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	0.00025	0.00025	0.0002500	0	98.9	50	150			J

Sample ID: **2103532-001FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **NAPIS-2** Batch ID: **58685** RunNo: **75946**
Prep Date: **3/11/2021** Analysis Date: **3/15/2021** SeqNo: **2687522** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103532-001FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **NAPIS-2** Batch ID: **58685** RunNo: **75946**
Prep Date: **3/11/2021** Analysis Date: **3/15/2021** SeqNo: **2687522** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.030	0.0010	0.02500	0.002756	109	70	130			
Lead	0.012	0.00050	0.01250	0.001490	85.9	70	130			
Selenium	0.029	0.0010	0.02500	0	116	70	130			
Thallium	0.011	0.00025	0.01250	0	86.6	70	130			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **C75953** RunNo: **75953**
Prep Date: Analysis Date: **3/15/2021** SeqNo: **2688657** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **C75953** RunNo: **75953**
Prep Date: Analysis Date: **3/15/2021** SeqNo: **2688658** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	105	50	150			
Arsenic	0.0011	0.0010	0.001000	0	105	50	150			
Lead	0.00050	0.00050	0.0005000	0	100	50	150			
Selenium	0.0010	0.0010	0.001000	0	105	50	150			
Thallium	0.00050	0.00025	0.0005000	0	100	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **C75953** RunNo: **75953**
Prep Date: Analysis Date: **3/15/2021** SeqNo: **2688660** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	94.0	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.0	85	115			
Lead	0.012	0.00050	0.01250	0	98.2	85	115			
Selenium	0.024	0.0010	0.02500	0	94.1	85	115			
Thallium	0.012	0.00025	0.01250	0	98.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **A75953** RunNo: **75953**
Prep Date: Analysis Date: **3/15/2021** SeqNo: **2688651** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00050								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A75953** RunNo: **75953**
Prep Date: Analysis Date: **3/15/2021** SeqNo: **2688652** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00098	0.0010	0.001000	0	97.8	50	150			J
Arsenic	0.00094	0.0010	0.001000	0	93.6	50	150			J
Lead	0.00051	0.00050	0.0005000	0	103	50	150			
Selenium	0.0012	0.0010	0.001000	0	125	50	150			
Thallium	0.00050	0.00050	0.0005000	0	99.0	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A75953** RunNo: **75953**
Prep Date: Analysis Date: **3/15/2021** SeqNo: **2688653** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.0	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.6	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.025	0.0010	0.02500	0	102	85	115			
Thallium	0.013	0.00050	0.01250	0	101	85	115			

Sample ID: **2103532-013DMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **DUP 3-10-21** Batch ID: **A75953** RunNo: **75953**
Prep Date: Analysis Date: **3/15/2021** SeqNo: **2688754** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.12	0.0050	0.1250	0	95.3	70	130			
Arsenic	0.14	0.0050	0.1250	0.009236	107	70	130			
Lead	0.053	0.0025	0.06250	0	85.6	70	130			
Thallium	0.053	0.0025	0.06250	0	84.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103532-013DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **DUP 3-10-21** Batch ID: **A75953** RunNo: **75953**
Prep Date: Analysis Date: **3/15/2021** SeqNo: **2688755** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.12	0.0050	0.1250	0	93.1	70	130	2.38	20	
Arsenic	0.15	0.0050	0.1250	0.009236	109	70	130	2.38	20	
Lead	0.054	0.0025	0.06250	0	86.4	70	130	0.992	20	
Thallium	0.052	0.0025	0.06250	0	84.0	70	130	0.0700	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58746** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **58746** RunNo: **75992**
Prep Date: **3/16/2021** Analysis Date: **3/16/2021** SeqNo: **2689621** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-58746** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **58746** RunNo: **75992**
Prep Date: **3/16/2021** Analysis Date: **3/16/2021** SeqNo: **2689622** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00017	0.00020	0.0001500	0	115	50	150			J

Sample ID: **LCS-58746** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **58746** RunNo: **75992**
Prep Date: **3/16/2021** Analysis Date: **3/16/2021** SeqNo: **2689623** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0054	0.00020	0.005000	0	107	85	115			

Sample ID: **2103532-011FMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **EB 3-10-21** Batch ID: **58746** RunNo: **75992**
Prep Date: **3/16/2021** Analysis Date: **3/16/2021** SeqNo: **2689666** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	105	75	125			

Sample ID: **2103532-011FMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **EB 3-10-21** Batch ID: **58746** RunNo: **75992**
Prep Date: **3/16/2021** Analysis Date: **3/16/2021** SeqNo: **2689667** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	104	75	125	0.512	20	

Sample ID: **MB-58800** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **58800** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691840** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LLLCS-58800** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **58800** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691841** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00013	0.00020	0.0001500	0	83.6	50	150			J

Sample ID: **LCS-58000** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **58800** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691842** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.2	85	115			

Sample ID: **MB-58801** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **58801** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691843** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-58801** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **58801** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691844** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00012	0.00020	0.0001500	0	77.1	50	150			J

Sample ID: **LCS-58801** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **58801** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691845** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	85	115			

Sample ID: **2103532-001EMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **NAPIS-2** Batch ID: **58800** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691857** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0046	0.00020	0.005000	0	92.4	75	125			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103532-001EMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **NAPIS-2** Batch ID: **58800** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691858** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0046	0.00020	0.005000	0	92.0	75	125	0.408	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **A75861** RunNo: **75861**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2684163** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **A75861** RunNo: **75861**
Prep Date: Analysis Date: **3/10/2021** SeqNo: **2684164** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	103	90	110			
Chloride	4.8	0.50	5.000	0	95.6	90	110			
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	96.8	90	110			
Bromide	2.6	0.10	2.500	0	105	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	96.5	90	110			
Phosphorus, Orthophosphate (As P	4.5	0.50	5.000	0	90.9	90	110			
Sulfate	9.7	0.50	10.00	0	96.8	90	110			

Sample ID: **2103532-011DMS** SampType: **ms** TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 3-10-21** Batch ID: **A75861** RunNo: **75861**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2684187** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	73.3	111			
Chloride	4.9	0.50	5.000	0	97.0	84.2	117			
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	98.2	75.5	113			
Bromide	2.7	0.10	2.500	0	107	85.9	106			S
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.0	86.8	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.8	70.5	118			
Sulfate	9.8	0.50	10.00	0	98.5	83.3	112			

Sample ID: **2103532-011DMSD** SampType: **msd** TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 3-10-21** Batch ID: **A75861** RunNo: **75861**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2684188** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	73.3	111	0.192	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103532-011DMSD** SampType: **msd** TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 3-10-21** Batch ID: **A75861** RunNo: **75861**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2684188** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.3	84.2	117	0.261	20	
Nitrogen, Nitrite (As N)	0.99	0.10	1.000	0	98.6	75.5	113	0.396	20	
Bromide	2.7	0.10	2.500	0	107	85.9	106	0.394	20	S
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.4	86.8	110	0.375	20	
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.0	70.5	118	0.222	20	
Sulfate	9.9	0.50	10.00	0	98.7	83.3	112	0.214	20	

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R75889** RunNo: **75889**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685167** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R75889** RunNo: **75889**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685168** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	101	90	110			
Chloride	4.7	0.50	5.000	0	94.3	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	95.8	90	110			
Bromide	2.4	0.10	2.500	0	95.2	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	100	90	110			
Phosphorus, Orthophosphate (As P	4.5	0.50	5.000	0	90.3	90	110			
Sulfate	9.6	0.50	10.00	0	95.5	90	110			

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R75905** RunNo: **75905**
Prep Date: Analysis Date: **3/12/2021** SeqNo: **2687108** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS**	SampType: **lcs**			TestCode: **EPA Method 300.0: Anions**						
Client ID: **LCSW**	Batch ID: **R75905**			RunNo: **75905**						
Prep Date:	Analysis Date: **3/12/2021**			SeqNo: **2687109**		Units: **mg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**

08-Apr-21

Client: Marathon

Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58711** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687472** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-58711** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687474** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-58711** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687476** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	114	70	130			

Sample ID: **LCSD-58711** SampType: **LCSD** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687477** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	107	70	130	5.93	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS-58742** SampType: **LCS** TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **LCSW** Batch ID: **58742** RunNo: **76431**
Prep Date: **3/16/2021** Analysis Date: **3/23/2021** SeqNo: **2707377** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.20	0.085	0.6000	0	33.8	21.1	126			
Surr: DNOP	0.054		0.06000		89.7	45.1	141			

Sample ID: **LCSD-58742** SampType: **LCSD** TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **LCSS02** Batch ID: **58742** RunNo: **76431**
Prep Date: **3/16/2021** Analysis Date: **3/23/2021** SeqNo: **2707378** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.24	0.085	0.6000	0	40.1	21.1	126	17.2	20	
Surr: DNOP	0.056		0.06000		92.8	45.1	141	0	0	

Sample ID: **LCSD-58760** SampType: **LCSD** TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **LCSS02** Batch ID: **58760** RunNo: **76431**
Prep Date: **3/16/2021** Analysis Date: **3/23/2021** SeqNo: **2707379** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.25	0.085	0.6000	0	41.9	21.1	126	5.79	20	
Surr: DNOP	0.058		0.06000		96.3	45.1	141	0	0	

Sample ID: **MB-58742** SampType: **MBLK** TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **PBW** Batch ID: **58742** RunNo: **76431**
Prep Date: **3/16/2021** Analysis Date: **3/23/2021** SeqNo: **2707380** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.085								
Motor Oil Range Organics (MRO)	ND	0.60								
Surr: DNOP	0.12		0.1200		96.1	45.1	141			

Sample ID: **MB-58760** SampType: **MBLK** TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **PBW** Batch ID: **58760** RunNo: **76431**
Prep Date: **3/16/2021** Analysis Date: **3/23/2021** SeqNo: **2707381** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.085								
Motor Oil Range Organics (MRO)	ND	0.60								
Surr: DNOP	0.11		0.1200		89.6	45.1	141			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCS-58760** SampType: **LCS** TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **LCSW** Batch ID: **58760** RunNo: **76431**
Prep Date: **3/16/2021** Analysis Date: **3/23/2021** SeqNo: **2707382** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.27	0.085	0.6000	0	44.4	21.1	126			
Surr: DNOP	0.053		0.06000		87.6	45.1	141			

NOTES:
See the Case Narrative Regarding the DRO results listed above.
See the Case Narrative Regarding the DRO results listed above.
See the Case Narrative Regarding the DRO results listed above.
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Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **100ng lcs** SampType: **LCS4** TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **BatchQC** Batch ID: **C76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2691287** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	92.1	80	120			
Toluene	18	1.0	20.00	0	90.8	80	120			
Surr: 1,2-Dichloroethane-d4	8.5		10.00		85.3	70	130			
Surr: 4-Bromofluorobenzene	8.5		10.00		84.7	70	130			
Surr: Dibromofluoromethane	8.8		10.00		87.6	70	130			
Surr: Toluene-d8	8.3		10.00		83.3	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW** Batch ID: **C76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2691288** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.5		10.00		84.9	70	130			
Surr: 4-Bromofluorobenzene	8.6		10.00		85.9	70	130			
Surr: Dibromofluoromethane	8.7		10.00		86.8	70	130			
Surr: Toluene-d8	8.3		10.00		82.6	70	130			

Sample ID: **100ng lcs** SampType: **LCS4** TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **BatchQC** Batch ID: **C76055** RunNo: **76055**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2692752** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.4	80	120			
Toluene	18	1.0	20.00	0	92.4	80	120			
Surr: 1,2-Dichloroethane-d4	8.7		10.00		87.1	70	130			
Surr: 4-Bromofluorobenzene	8.7		10.00		86.9	70	130			
Surr: Dibromofluoromethane	9.2		10.00		92.3	70	130			
Surr: Toluene-d8	8.4		10.00		84.1	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW** Batch ID: **C76055** RunNo: **76055**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2692756** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **C76055**	RunNo: **76055**
Prep Date:	Analysis Date: **3/18/2021**	SeqNo: **2692756** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.9		10.00		88.8	70	130			
Surr: 4-Bromofluorobenzene	8.5		10.00		84.8	70	130			
Surr: Dibromofluoromethane	9.0		10.00		89.6	70	130			
Surr: Toluene-d8	8.3		10.00		83.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **A76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690792** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	92.1	70	130			
Toluene	18	1.0	20.00	0	90.8	70	130			
Chlorobenzene	17	1.0	20.00	0	84.0	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	89.3	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	84.9	70	130			
Surr: 1,2-Dichloroethane-d4	8.5		10.00		85.3	70	130			
Surr: 4-Bromofluorobenzene	8.5		10.00		84.7	70	130			
Surr: Dibromofluoromethane	8.8		10.00		87.6	70	130			
Surr: Toluene-d8	8.3		10.00		83.3	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690819** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A76015**	RunNo: **76015**
Prep Date:	Analysis Date: **3/17/2021**	SeqNo: **2690819** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690819** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.5		10.00		84.9	70	130			
Surr: 4-Bromofluorobenzene	8.6		10.00		85.9	70	130			
Surr: Dibromofluoromethane	8.7		10.00		86.8	70	130			
Surr: Toluene-d8	8.3		10.00		82.6	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **A76055** RunNo: **76055**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2692166** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.4	70	130			
Toluene	18	1.0	20.00	0	92.4	70	130			
Chlorobenzene	17	1.0	20.00	0	86.2	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	94.6	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	91.9	70	130			
Surr: 1,2-Dichloroethane-d4	8.7		10.00		87.1	70	130			
Surr: 4-Bromofluorobenzene	8.7		10.00		86.9	70	130			
Surr: Dibromofluoromethane	9.2		10.00		92.3	70	130			
Surr: Toluene-d8	8.4		10.00		84.1	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A76055** RunNo: **76055**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2692204** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A76055**	RunNo: **76055**
Prep Date:	Analysis Date: **3/18/2021**	SeqNo: **2692204** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	0.41	3.0								J
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A76055**	RunNo: **76055**
Prep Date:	Analysis Date: **3/18/2021**	SeqNo: **2692204** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.9		10.00		88.8	70	130			
Surr: 4-Bromofluorobenzene	8.5		10.00		84.8	70	130			
Surr: Dibromofluoromethane	9.0		10.00		89.6	70	130			
Surr: Toluene-d8	8.3		10.00		83.3	70	130			

Sample ID: **100ng lcsd4**	SampType: **LCS4**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **BatchQC**	Batch ID: **R76128**	RunNo: **76128**
Prep Date:	Analysis Date: **3/22/2021**	SeqNo: **2695333** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.5	70	130			
Surr: 4-Bromofluorobenzene	8.0		10.00		79.9	70	130			
Surr: Dibromofluoromethane	9.4		10.00		94.3	70	130			
Surr: Toluene-d8	8.3		10.00		82.5	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R76128**	RunNo: **76128**
Prep Date:	Analysis Date: **3/22/2021**	SeqNo: **2695358** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	8.7		10.00		86.7	70	130			
Surr: 4-Bromofluorobenzene	8.8		10.00		88.2	70	130			
Surr: Dibromofluoromethane	9.2		10.00		92.4	70	130			
Surr: Toluene-d8	8.3		10.00		83.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58720**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**							
Client ID: **PBW**	Batch ID: **58720**	RunNo: **76019**							
Prep Date: **3/15/2021**	Analysis Date: **3/17/2021**	SeqNo: **2690930**	Units: **µg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Azobenzene	ND	5.0								
Benzoic acid	ND	5.0								
Benzyl alcohol	ND	5.0								
Bis(2-chloroethoxy)methane	ND	5.0								
Bis(2-chloroethyl)ether	ND	5.0								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	8.4	10								J
4-Bromophenyl phenyl ether	ND	5.0								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
2-Chloronaphthalene	ND	5.0								
2-Chlorophenol	ND	5.0								
4-Chlorophenyl phenyl ether	ND	5.0								
Di-n-butyl phthalate	7.7	10								J
Di-n-octyl phthalate	9.2	10								J
Dibenzofuran	ND	5.0								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
3,3´-Dichlorobenzidine	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	5.0								
4,6-Dinitro-2-methylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	5.0								
Hexachlorobenzene	ND	5.0								
Hexachlorobutadiene	ND	5.0								
Hexachlorocyclopentadiene	ND	5.0								
Hexachloroethane	ND	5.0								
Isophorone	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
N-Nitrosodi-n-propylamine	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58720** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **58720** RunNo: **76019**
Prep Date: **3/15/2021** Analysis Date: **3/17/2021** SeqNo: **2690930** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	5.0								
2-Nitroaniline	ND	5.0								
3-Nitroaniline	ND	5.0								
4-Nitroaniline	ND	5.0								
Nitrobenzene	ND	5.0								
2-Nitrophenol	ND	5.0								
4-Nitrophenol	ND	5.0								
Pentachlorophenol	ND	5.0								
Phenol	ND	5.0								
Pyridine	ND	5.0								
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	120		200.0		59.6	15	88.8			
Surr: Phenol-d5	99		200.0		49.5	15	71.9			
Surr: 2,4,6-Tribromophenol	140		200.0		70.6	15	97.4			
Surr: Nitrobenzene-d5	64		100.0		64.1	15	117			
Surr: 2-Fluorobiphenyl	61		100.0		61.2	15	100			
Surr: 4-Terphenyl-d14	95		100.0		95.4	15	120			

Sample ID: **lcs-58720** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **58720** RunNo: **76019**
Prep Date: **3/15/2021** Analysis Date: **3/17/2021** SeqNo: **2690931** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	110	5.0	200.0	0	57.3	27.5	113			
2-Chlorophenol	130	5.0	200.0	0	63.0	17.9	103			
1,4-Dichlorobenzene	53	5.0	100.0	0	52.9	15	79.9			
2,4-Dinitrotoluene	55	5.0	100.0	0	54.6	22.9	97.2			
N-Nitrosodi-n-propylamine	57	5.0	100.0	0	57.1	34.1	104			
4-Nitrophenol	97	5.0	200.0	0	48.5	20	78.8			
Pentachlorophenol	140	5.0	200.0	0	70.0	26.8	97.6			
Phenol	82	5.0	200.0	0	41.1	15	66.2			
1,2,4-Trichlorobenzene	55	5.0	100.0	0	55.4	15	88.2			
Surr: 2-Fluorophenol	80		200.0		40.2	15	88.8			
Surr: Phenol-d5	64		200.0		32.2	15	71.9			
Surr: 2,4,6-Tribromophenol	120		200.0		61.2	15	97.4			
Surr: Nitrobenzene-d5	51		100.0		51.1	15	117			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **lcs-58720** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **58720** RunNo: **76019**
Prep Date: **3/15/2021** Analysis Date: **3/17/2021** SeqNo: **2690931** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	46		100.0		46.3	15	100			
Surr: 4-Terphenyl-d14	110		100.0		109	15	120			

Sample ID: **lcsd-58720** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **58720** RunNo: **76019**
Prep Date: **3/15/2021** Analysis Date: **3/17/2021** SeqNo: **2690932** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	100	5.0	200.0	0	52.0	27.5	113	9.73	45.2	
2-Chlorophenol	110	5.0	200.0	0	56.4	17.9	103	11.1	51.8	
1,4-Dichlorobenzene	47	5.0	100.0	0	47.4	15	79.9	10.9	59.6	
2,4-Dinitrotoluene	48	5.0	100.0	0	48.2	22.9	97.2	12.5	46.5	
N-Nitrosodi-n-propylamine	49	5.0	100.0	0	49.0	34.1	104	15.3	47.7	
4-Nitrophenol	84	5.0	200.0	0	42.0	20	78.8	14.3	42.6	
Pentachlorophenol	120	5.0	200.0	0	60.8	26.8	97.6	14.0	48.7	
Phenol	76	5.0	200.0	0	38.2	15	66.2	7.21	47.1	
1,2,4-Trichlorobenzene	45	5.0	100.0	0	45.3	15	88.2	20.2	52.5	
Surr: 2-Fluorophenol	69		200.0		34.5	15	88.8	0	0	
Surr: Phenol-d5	56		200.0		27.8	15	71.9	0	0	
Surr: 2,4,6-Tribromophenol	97		200.0		48.6	15	97.4	0	0	
Surr: Nitrobenzene-d5	41		100.0		41.0	15	117	0	0	
Surr: 2-Fluorobiphenyl	40		100.0		39.5	15	100	0	0	
Surr: 4-Terphenyl-d14	95		100.0		95.4	15	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58709** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **58709** RunNo: **75993**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689651** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	0.10								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthylene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.10								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.10								
Benzo(g,h,i)perylene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	2.0		4.000		50.0	26.3	112			
Surr: 2-Fluorobiphenyl	1.9		4.000		46.5	21.1	110			
Surr: 4-Terphenyl-d14	3.3		4.000		82.0	17.6	167			

Sample ID: **lcs-58709** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **58709** RunNo: **75993**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689653** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.66	0.10	2.000	0	33.0	15	69.4			
Naphthalene	1.1	0.10	2.000	0	57.0	18.5	83.4			
1-Methylnaphthalene	1.1	0.10	2.000	0	56.0	15.1	89.6			
2-Methylnaphthalene	1.1	0.10	2.000	0	57.0	15	90.6			
Acenaphthylene	1.1	0.10	2.000	0	55.0	18.2	95.3			
Acenaphthene	1.1	0.10	2.000	0	53.0	23.9	90.3			
Fluorene	1.1	0.10	2.000	0	54.0	16.8	106			
Phenanthrene	1.1	0.10	2.000	0	54.0	23.3	105			
Anthracene	1.1	0.10	2.000	0	57.0	15	112			
Fluoranthene	1.5	0.20	2.000	0	74.0	15.4	138			
Pyrene	1.3	0.20	2.000	0	64.0	15	128			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **lcs-58709** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **58709** RunNo: **75993**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689653** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benz(a)anthracene	1.5	0.10	2.000	0	75.0	38.7	111			
Chrysene	1.3	0.10	2.000	0	67.0	32.6	96.6			
Benzo(b)fluoranthene	1.4	0.10	2.000	0	70.0	23.8	113			
Benzo(k)fluoranthene	1.4	0.10	2.000	0	68.0	18.3	114			
Benzo(a)pyrene	1.4	0.070	2.000	0	68.0	24.5	123			
Dibenz(a,h)anthracene	1.4	0.10	2.000	0	72.0	17.8	118			
Benzo(g,h,i)perylene	1.4	0.10	2.000	0	71.0	22.2	110			
Indeno(1,2,3-cd)pyrene	1.4	0.30	2.000	0	72.0	20.8	115			
Surr: Nitrobenzene-d5	3.1		5.000		62.8	26.3	112			
Surr: 2-Fluorobiphenyl	2.9		5.000		58.4	21.1	110			
Surr: 4-Terphenyl-d14	4.4		5.000		88.0	17.6	167			

Sample ID: **lcsd-58709** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **58709** RunNo: **75993**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689654** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.60	0.10	2.000	0	30.0	15	69.4	9.52	20	
Naphthalene	1.1	0.10	2.000	0	53.0	18.5	83.4	7.27	20	
1-Methylnaphthalene	1.0	0.10	2.000	0	52.0	15.1	89.6	7.41	20	
2-Methylnaphthalene	1.1	0.10	2.000	0	53.0	15	90.6	7.27	20	
Acenaphthylene	1.0	0.10	2.000	0	50.0	18.2	95.3	9.52	20	
Acenaphthene	0.96	0.10	2.000	0	48.0	23.9	90.3	9.90	20	
Fluorene	0.98	0.10	2.000	0	49.0	16.8	106	9.71	20	
Phenanthrene	0.98	0.10	2.000	0	49.0	23.3	105	9.71	20	
Anthracene	1.1	0.10	2.000	0	53.0	15	112	7.27	20	
Fluoranthene	1.3	0.20	2.000	0	66.0	15.4	138	11.4	20	
Pyrene	1.2	0.20	2.000	0	58.0	15	128	9.84	20	
Benz(a)anthracene	1.4	0.10	2.000	0	71.0	38.7	111	5.48	20	
Chrysene	1.3	0.10	2.000	0	66.0	32.6	96.6	1.50	20	
Benzo(b)fluoranthene	1.4	0.10	2.000	0	71.0	23.8	113	1.42	20	
Benzo(k)fluoranthene	1.4	0.10	2.000	0	69.0	18.3	114	1.46	20	
Benzo(a)pyrene	1.3	0.070	2.000	0	66.0	24.5	123	2.99	20	
Dibenz(a,h)anthracene	1.3	0.10	2.000	0	67.0	17.8	118	7.19	20	
Benzo(g,h,i)perylene	1.3	0.10	2.000	0	67.0	22.2	110	5.80	20	
Indeno(1,2,3-cd)pyrene	1.4	0.30	2.000	0	69.0	20.8	115	4.26	20	
Surr: Nitrobenzene-d5	2.8		5.000		55.2	26.3	112	0	0	
Surr: 2-Fluorobiphenyl	2.5		5.000		50.4	21.1	110	0	0	
Surr: 4-Terphenyl-d14	4.0		5.000		80.0	17.6	167	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58661** SampType: **MBLK** TestCode: **SM5210B: BOD**
Client ID: **PBW** Batch ID: **58661** RunNo: **76009**
Prep Date: **3/11/2021** Analysis Date: **3/16/2021** SeqNo: **2690392** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID: **LCS-58661** SampType: **LCS** TestCode: **SM5210B: BOD**
Client ID: **LCSW** Batch ID: **58661** RunNo: **76009**
Prep Date: **3/11/2021** Analysis Date: **3/16/2021** SeqNo: **2690393** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	166	2.0	198.0	0	83.8	84.6	115.4			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2.5ng gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **B76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690821** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.4	70	130			
Surr: BFB	9.8		10.00		97.5	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **B76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690848** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.017	0.050								J
Surr: BFB	9.5		10.00		94.9	70	130			

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **B76055** RunNo: **76055**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2692208** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	88.7	70	130			
Surr: BFB	9.8		10.00		97.6	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **B76055** RunNo: **76055**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2692241** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.017	0.050								J
Surr: BFB	9.5		10.00		95.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58752** SampType: **MBLK** TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW** Batch ID: **58752** RunNo: **76006**
Prep Date: **3/16/2021** Analysis Date: **3/17/2021** SeqNo: **2690260** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: **LCS-58752** SampType: **LCS** TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW** Batch ID: **58752** RunNo: **76006**
Prep Date: **3/16/2021** Analysis Date: **3/17/2021** SeqNo: **2690261** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	986	20.0	1000	0	98.6	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103532**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58670** SampType: **MBLK** TestCode: **SM 2540D: TSS**
Client ID: **PBW** Batch ID: **58670** RunNo: **75892**
Prep Date: **3/11/2021** Analysis Date: **3/11/2021** SeqNo: **2685325** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID: **LCS-58670** SampType: **LCS** TestCode: **SM 2540D: TSS**
Client ID: **LCSW** Batch ID: **58670** RunNo: **75892**
Prep Date: **3/11/2021** Analysis Date: **3/11/2021** SeqNo: **2685326** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	86	4.0	92.10	0	93.4	83.71	119.44			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2103532** RcptNo: **1**

Received By: **Cheyenne Cason** **3/10/2021 4:45:00 PM**

Completed By: **Desiree Dominguez** **3/10/2021 4:50:51 PM** DD

Reviewed By: SGL 3/11/21

BOD & NO_2/NO_3 Checked by: SPA 3.10.21 @ 17:00
TDS: DAD 3.11.21

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
   Samples were collected the same day and chilled.
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 39 (<2 or >12 unless noted)
Adjusted? no
Checked by: CM 3/11/21

NO_2/NO_3 LABED/pH checked: CM 3/10/21
TDS: ENM 3/11/21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.0	Good				
2	6.5	Good				
3	2.2					
4	3.5					

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2103532** RcptNo: **1**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
5	4.4					

Released to Imaging: 11/29/2022 10:23:25 AM
Received by OCD: 3/25/2022 3:35:30 PM

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Petroleum Company	☒ Standard ☐ Rush
Mailing Address: 92 Giant Crossing Rd. Jamestown, NM 87347	Project Name: 2021 GW Sampling - 1st Quarter
Phone #: 808-640-1823	Project #: 697-080-001
email or Fax#: bmcloughlin@trihydro.com	Project Manager: Brian McLoughlin
QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)	Sampler:
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	On Ice: ☒ Yes ☐ No
☒ EDD (Type)	# of Coolers: 5
	Cooler Temp(including CF): See Remarks

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2103532	8260B BTEX/MTBE	TPH GRO	TPH DRO/MRO	SVOC includes 1,4 Dioxane on reques	1,4 Dioxane only	WQCC metals	C/A	NO2/NO3 combined	Nitrite	8011 EDB	BOD VOC	COD	Cyanide	TDS/TSS	Gen Chem	PFAS BOD
3/9	14:10	water	NAPIS-2	13		-001	X	X	X	X		X	X									
3/9	14:30	water	STP-1-NW	13		-002		X	X	X		X	X				X					
3/9	14:55	water	MKTF-50	13		-003		X	X	X	X	X	X				X					
3/9	15:10	water	MKTF-49	13		-004		X	X	X	X	X	X				X					
3/10	8:20	water	MKTF-10	11		-005		X	X	X		X					X					
3/10	8:50	water	MKTF-11	11		-006		X	X	X		X					X					
3/10	9:20	water	MKTF-02	13		-007		X	X	X	[redacted]	X				X	X					
3/10	11:10	water	OW-56	13		-008		X	X			X		X	X	X	X					
3/10	10:45	water	West LDU	11		-009	X	X	X		X	X										
3/10	10:55	water	EAST LDU	9		-010	X	X	X			X										
3/10	11:10	water	EB 3-10-21	13		-011		X	X			X		X	X	X	X					
3/10	9:35	water	STP-EP	12		-012		X	X			X					X	X		X		X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
3/10	1:30	Hilario Trejo	[redacted]	Courier	3/10/21	1645
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:
4.9+0.1=5.0 3.4+0.1=3.5
6.4+0.1=6.5 4.3+0.1=4.4
2.1+0.1=2.2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 11/29/2022 10:33:25 AM

Received by OCD: 3/25/2022 3:35:30 PM

Chain of Custody Record

Client: Marathon Petroleum Company

Mailing Address: 92 Giant Crossing Rd. Jamestown, NM 87347

Phone #: 808-640-1823

email or Fax#: bmcloughlin@trihydro.com

QA/QC Package:
☐ Standard ☑ Level 4 (Full Validation)

Accreditation:
☐ NELAC ☐ Other

☐ EDD (Type)

☑ Standard ☐ Rush

Project Name: 2021 GW Sampling - 1st Quarter

Project #: 697-080-001

Project Manager: Brian McLoughlin

Sampler:

On Ice: ☑ Yes ☐ No

# of Coolers: 5

Cooler Temp (including CF): See first page

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No 2103532
3-10	[illegible]	water	DUP 3-10-21	11		-013
3/10		water				
3/10		water				
3/10		water				
3/10		water				
		water				
		water				
		water				
		water				
		water				
		water				
		water				

Analysis Request

8260/BTEX/MTBE	TPH GRO	TPH DRO/MRO	SVOC includes 1,4 Dioxane on reques	1,4 Dioxane only	WQCC metals	C/A	NO2/NO3 combined	Nitrite	8011 EDB	BOD VOC	COD	Cyanide	TDS/TSS	Gen Chem	PFAS
	X	X	X		X	X				X					

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
3-10	1:30	[signature]	[signature]	courier	3/10/21	1645
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
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Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

April 08, 2021

Brian McLoughlin
Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX

RE: 2021 GW Sampling 1st Quarter OrderNo.: 2103612

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 13 sample(s) on 3/11/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Case Narrative

WO#: **2103612**
Date: **4/8/2021**

CLIENT: Marathon
Project: 2021 GW Sampling 1st Quarter

Analytical Notes Regarding EPA Method 8015D:
The samples listed below had a single contaminant peak that was identified in the QC and the samples listed below. The contaminant peak was manually removed from the summation of the diesel range organcis results. The concentration of the contaminant peak, in the samples that was removed, is listed next to the sample name: MKTF-44 (2.7mg/L), MKTF-38 (3.1mg/L), Dup 3-11-21 (0.62mg/L), LCS 58760 (LCS 0.02mg/L), LCSD 58760 (1.05mg/L). We are researching the source of the contamination to prevent this peak from appearing in the future.

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 1:15:00 PM
Lab ID: 2103612-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Toluene	ND	0.20	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Naphthalene	ND	0.28	2.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Acetone	ND	2.3	10		µg/L	1	3/18/2021 4:23:02 AM	A76015
Bromobenzene	ND	0.28	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Bromoform	ND	0.31	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Bromomethane	ND	1.6	3.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
2-Butanone	ND	1.1	10		µg/L	1	3/18/2021 4:23:02 AM	A76015
Carbon disulfide	ND	0.44	10		µg/L	1	3/18/2021 4:23:02 AM	A76015
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Chloroethane	ND	0.38	2.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Chloroform	ND	0.13	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Chloromethane	ND	0.40	3.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Dibromomethane	ND	0.31	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 1:15:00 PM
Lab ID: 2103612-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
2-Hexanone	ND	1.8	10		µg/L	1	3/18/2021 4:23:02 AM	A76015
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/18/2021 4:23:02 AM	A76015
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Styrene	ND	0.13	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/18/2021 4:23:02 AM	A76015
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/18/2021 4:23:02 AM	A76015
Surr: 1,2-Dichloroethane-d4	87.6	0	70-130		%Rec	1	3/18/2021 4:23:02 AM	A76015
Surr: 4-Bromofluorobenzene	87.3	0	70-130		%Rec	1	3/18/2021 4:23:02 AM	A76015
Surr: Dibromofluoromethane	94.7	0	70-130		%Rec	1	3/18/2021 4:23:02 AM	A76015
Surr: Toluene-d8	83.4	0	70-130		%Rec	1	3/18/2021 4:23:02 AM	A76015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.017	0.0080	0.050	J	mg/L	1	3/18/2021 4:23:02 AM	B76015
Surr: BFB	94.4	0	70-130		%Rec	1	3/18/2021 4:23:02 AM	B76015

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 1:15:00 PM
Lab ID: 2103612-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.42	0.0056	0.020	*	mg/L	1	3/19/2021 8:26:55 AM	A76065
Barium	0.048	0.0011	0.0020		mg/L	1	3/18/2021 10:23:47 AM	A76034
Beryllium	ND	0.00088	0.0020		mg/L	1	3/18/2021 10:23:47 AM	A76034
Boron	2.3	0.033	0.20		mg/L	5	3/18/2021 10:25:25 AM	A76034
Cadmium	ND	0.0012	0.0020		mg/L	1	3/18/2021 10:23:47 AM	A76034
Calcium	4.8	0.11	1.0		mg/L	1	3/18/2021 10:23:47 AM	A76034
Chromium	0.0024	0.0020	0.0060	J	mg/L	1	3/18/2021 10:23:47 AM	A76034
Cobalt	ND	0.0024	0.0060		mg/L	1	3/18/2021 10:23:47 AM	A76034
Copper	ND	0.0035	0.0060		mg/L	1	3/18/2021 10:23:47 AM	A76034
Iron	0.44	0.010	0.020	*	mg/L	1	3/18/2021 10:23:47 AM	A76034
Magnesium	0.66	0.067	1.0	J	mg/L	1	3/18/2021 10:23:47 AM	A76034
Manganese	0.034	0.00058	0.0020		mg/L	1	3/18/2021 10:23:47 AM	A76034
Molybdenum	0.025	0.0056	0.0080		mg/L	1	3/18/2021 10:23:47 AM	A76034
Nickel	0.0053	0.0033	0.010	J	mg/L	1	3/18/2021 10:23:47 AM	A76034
Potassium	1.3	0.16	1.0		mg/L	1	3/18/2021 10:23:47 AM	A76034
Silver	ND	0.0013	0.0050		mg/L	1	3/18/2021 10:23:47 AM	A76034
Sodium	400	0.69	5.0		mg/L	5	3/18/2021 10:25:25 AM	A76034
Zinc	0.038	0.0060	0.010		mg/L	1	3/19/2021 8:26:55 AM	A76065
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00072	0.00070	0.0010	J	mg/L	1	3/15/2021 4:28:08 PM	B75953
Arsenic	0.0066	0.00021	0.0010		mg/L	1	3/15/2021 4:28:08 PM	B75953
Lead	0.000094	0.000034	0.00050	J	mg/L	1	3/15/2021 4:28:08 PM	B75953
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 4:28:08 PM	B75953
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 4:28:08 PM	B75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:38:44 PM	58801

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BW-4B
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 1:15:00 PM
Lab ID: 2103612-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	7.3	0.074	0.20	*	mg/L	10	3/16/2021 12:52:49 PM	58726
Barium	0.12	0.0016	0.0030		mg/L	1	3/16/2021 11:48:12 AM	58726
Beryllium	ND	0.00088	0.0020		mg/L	1	3/16/2021 11:48:12 AM	58726
Boron	2.4	0.037	0.20		mg/L	5	3/16/2021 11:49:32 AM	58726
Cadmium	ND	0.0015	0.0020		mg/L	1	3/16/2021 11:48:12 AM	58726
Chromium	0.020	0.0021	0.0060		mg/L	1	3/16/2021 11:48:12 AM	58726
Cobalt	ND	0.0024	0.0060		mg/L	1	3/16/2021 11:48:12 AM	58726
Copper	0.010	0.0047	0.0060		mg/L	1	3/16/2021 11:48:12 AM	58726
Iron	3.7	0.064	0.25	*	mg/L	5	3/16/2021 11:49:32 AM	58726
Manganese	0.071	0.00081	0.0020	*	mg/L	1	3/16/2021 11:48:12 AM	58726
Molybdenum	0.023	0.0065	0.0080		mg/L	1	3/16/2021 11:48:12 AM	58726
Nickel	0.018	0.0033	0.010		mg/L	1	3/16/2021 11:48:12 AM	58726
Silver	0.026	0.0013	0.0050		mg/L	1	3/16/2021 2:27:17 PM	58726
Zinc	0.016	0.0064	0.010		mg/L	1	3/16/2021 11:48:12 AM	58726
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/16/2021 4:40:36 PM	58726
Arsenic	0.0072	0.00026	0.0010		mg/L	1	3/16/2021 4:40:36 PM	58726
Lead	0.0019	0.000034	0.00050		mg/L	1	3/16/2021 4:40:36 PM	58726
Selenium	0.00068	0.00066	0.0010	J	mg/L	1	3/16/2021 4:40:36 PM	58726
Thallium	ND	0.00025	0.00025		mg/L	1	3/16/2021 4:40:36 PM	58726
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/17/2021 2:32:27 PM	58766

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Toluene	ND	0.20	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Naphthalene	ND	0.28	2.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Acetone	ND	2.3	10		µg/L	1	3/18/2021 4:42:58 PM	A76055
Bromobenzene	ND	0.28	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Bromoform	ND	0.31	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Bromomethane	ND	1.6	3.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
2-Butanone	ND	1.1	10		µg/L	1	3/18/2021 4:42:58 PM	A76055
Carbon disulfide	ND	0.44	10		µg/L	1	3/18/2021 4:42:58 PM	A76055
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Chloroethane	ND	0.38	2.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Chloroform	ND	0.13	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Chloromethane	ND	0.40	3.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Dibromomethane	ND	0.31	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
2-Hexanone	ND	1.8	10		µg/L	1	3/18/2021 4:42:58 PM	A76055
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/18/2021 4:42:58 PM	A76055
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Styrene	ND	0.13	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/18/2021 4:42:58 PM	A76055
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/18/2021 4:42:58 PM	A76055
Surr: 1,2-Dichloroethane-d4	90.8	0	70-130		%Rec	1	3/18/2021 4:42:58 PM	A76055
Surr: 4-Bromofluorobenzene	88.6	0	70-130		%Rec	1	3/18/2021 4:42:58 PM	A76055
Surr: Dibromofluoromethane	91.1	0	70-130		%Rec	1	3/18/2021 4:42:58 PM	A76055
Surr: Toluene-d8	81.8	0	70-130		%Rec	1	3/18/2021 4:42:58 PM	A76055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.015	0.0080	0.050	J	mg/L	1	3/18/2021 4:42:58 PM	B76055
Surr: BFB	94.8	0	70-130		%Rec	1	3/18/2021 4:42:58 PM	B76055

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-002B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	ND	0.075	0.085		mg/L	1	3/23/2021 10:43:53 PM	58760
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 10:43:53 PM	58760
Surr: DNOP	91.6	0	45.1-141		%Rec	1	3/23/2021 10:43:53 PM	58760

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	2.3	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Azobenzene	ND	2.5	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Benzoic acid	ND	4.8	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Benzyl alcohol	ND	3.1	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Bis(2-chloroethoxy)methane	ND	1.9	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Bis(2-chloroethyl)ether	ND	2.9	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Bis(2-chloroisopropyl)ether	ND	2.5	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Bis(2-ethylhexyl)phthalate	33	20	45	J	µg/L	1	3/18/2021 3:36:08 AM	58720
4-Bromophenyl phenyl ether	ND	3.5	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Butyl benzyl phthalate	ND	3.3	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Carbazole	ND	2.6	23		µg/L	1	3/18/2021 3:36:08 AM	58720
4-Chloro-3-methylphenol	ND	1.9	23		µg/L	1	3/18/2021 3:36:08 AM	58720
4-Chloroaniline	ND	2.4	23		µg/L	1	3/18/2021 3:36:08 AM	58720
2-Chloronaphthalene	ND	2.7	23		µg/L	1	3/18/2021 3:36:08 AM	58720
2-Chlorophenol	ND	2.8	23		µg/L	1	3/18/2021 3:36:08 AM	58720
4-Chlorophenyl phenyl ether	ND	2.6	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Di-n-butyl phthalate	ND	29	45		µg/L	1	3/18/2021 3:36:08 AM	58720
Di-n-octyl phthalate	ND	14	45		µg/L	1	3/18/2021 3:36:08 AM	58720
Dibenzofuran	ND	1.7	23		µg/L	1	3/18/2021 3:36:08 AM	58720
1,2-Dichlorobenzene	ND	3.4	23		µg/L	1	3/18/2021 3:36:08 AM	58720
1,3-Dichlorobenzene	ND	2.9	23		µg/L	1	3/18/2021 3:36:08 AM	58720
1,4-Dichlorobenzene	ND	3.2	23		µg/L	1	3/18/2021 3:36:08 AM	58720
3,3´-Dichlorobenzidine	ND	2.3	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Diethyl phthalate	ND	18	45		µg/L	1	3/18/2021 3:36:08 AM	58720
Dimethyl phthalate	ND	9.1	45		µg/L	1	3/18/2021 3:36:08 AM	58720
2,4-Dichlorophenol	ND	2.7	23		µg/L	1	3/18/2021 3:36:08 AM	58720
2,4-Dimethylphenol	ND	4.4	23		µg/L	1	3/18/2021 3:36:08 AM	58720
4,6-Dinitro-2-methylphenol	ND	2.4	23		µg/L	1	3/18/2021 3:36:08 AM	58720
2,4-Dinitrophenol	ND	2.3	23		µg/L	1	3/18/2021 3:36:08 AM	58720
2,4-Dinitrotoluene	ND	2.8	23		µg/L	1	3/18/2021 3:36:08 AM	58720
2,6-Dinitrotoluene	ND	2.6	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Hexachlorobenzene	ND	3.0	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Hexachlorobutadiene	ND	3.7	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Hexachlorocyclopentadiene	ND	2.9	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Hexachloroethane	ND	2.0	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Isophorone	ND	1.8	23		µg/L	1	3/18/2021 3:36:08 AM	58720
2-Methylphenol	ND	2.3	23		µg/L	1	3/18/2021 3:36:08 AM	58720
3+4-Methylphenol	ND	2.1	23		µg/L	1	3/18/2021 3:36:08 AM	58720
N-Nitrosodi-n-propylamine	ND	2.2	23		µg/L	1	3/18/2021 3:36:08 AM	58720
N-Nitrosodimethylamine	ND	1.6	23		µg/L	1	3/18/2021 3:36:08 AM	58720

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	4.6	23		µg/L	1	3/18/2021 3:36:08 AM	58720
2-Nitroaniline	ND	1.4	23		µg/L	1	3/18/2021 3:36:08 AM	58720
3-Nitroaniline	ND	7.1	23		µg/L	1	3/18/2021 3:36:08 AM	58720
4-Nitroaniline	ND	2.1	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Nitrobenzene	ND	2.3	23		µg/L	1	3/18/2021 3:36:08 AM	58720
2-Nitrophenol	ND	2.2	23		µg/L	1	3/18/2021 3:36:08 AM	58720
4-Nitrophenol	ND	1.3	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Pentachlorophenol	ND	2.7	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Phenol	ND	1.5	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Pyridine	ND	4.2	23		µg/L	1	3/18/2021 3:36:08 AM	58720
1,2,4-Trichlorobenzene	ND	2.7	23		µg/L	1	3/18/2021 3:36:08 AM	58720
2,4,5-Trichlorophenol	ND	2.8	23		µg/L	1	3/18/2021 3:36:08 AM	58720
2,4,6-Trichlorophenol	ND	2.0	23		µg/L	1	3/18/2021 3:36:08 AM	58720
Surr: 2-Fluorophenol	49.2	0	15-88.8		%Rec	1	3/18/2021 3:36:08 AM	58720
Surr: Phenol-d5	39.8	0	15-71.9		%Rec	1	3/18/2021 3:36:08 AM	58720
Surr: 2,4,6-Tribromophenol	53.9	0	15-97.4		%Rec	1	3/18/2021 3:36:08 AM	58720
Surr: Nitrobenzene-d5	55.7	0	15-117		%Rec	1	3/18/2021 3:36:08 AM	58720
Surr: 2-Fluorobiphenyl	54.9	0	15-100		%Rec	1	3/18/2021 3:36:08 AM	58720
Surr: 4-Terphenyl-d14	97.2	0	15-120		%Rec	1	3/18/2021 3:36:08 AM	58720
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.17	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
1-Methylnaphthalene	ND	0.12	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
2-Methylnaphthalene	ND	0.17	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
Acenaphthylene	ND	0.22	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
Acenaphthene	ND	0.15	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
Fluorene	ND	0.15	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
Phenanthrene	ND	0.28	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
Anthracene	ND	0.17	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
Fluoranthene	ND	0.50	1.0		µg/L	1	3/19/2021 11:17:00 PM	58709
Pyrene	ND	0.80	1.0		µg/L	1	3/19/2021 11:17:00 PM	58709
Benz(a)anthracene	ND	0.18	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
Chrysene	ND	0.12	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
Benzo(b)fluoranthene	ND	0.28	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
Benzo(k)fluoranthene	ND	0.18	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
Benzo(a)pyrene	ND	0.17	0.35		µg/L	1	3/19/2021 11:17:00 PM	58709
Dibenz(a,h)anthracene	ND	0.17	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
Benzo(g,h,i)perylene	ND	0.17	0.50		µg/L	1	3/19/2021 11:17:00 PM	58709
Indeno(1,2,3-cd)pyrene	ND	0.22	1.5		µg/L	1	3/19/2021 11:17:00 PM	58709
Surr: Nitrobenzene-d5	72.5	0	26.3-112		%Rec	1	3/19/2021 11:17:00 PM	58709
Surr: 2-Fluorobiphenyl	70.0	0	21.1-110		%Rec	1	3/19/2021 11:17:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	92.5	0	17.6-167		%Rec	1	3/19/2021 11:17:00 PM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.22	0.50		mg/L	5	3/11/2021 6:54:06 PM	R75904
Chloride	230	5.0	10		mg/L	20	3/11/2021 7:06:58 PM	R75904
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/11/2021 6:54:06 PM	R75904
Bromide	0.58	0.25	0.50		mg/L	5	3/11/2021 6:54:06 PM	R75904
Nitrogen, Nitrate (As N)	1.5	0.10	0.50		mg/L	5	3/11/2021 6:54:06 PM	R75904
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/11/2021 6:54:06 PM	R75904
Sulfate	120	1.2	2.5		mg/L	5	3/11/2021 6:54:06 PM	R75904

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-002E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.10	0.0056	0.020		mg/L	1	3/19/2021 8:28:30 AM	A76065
Barium	0.037	0.0011	0.0020		mg/L	1	3/18/2021 10:26:56 AM	A76034
Beryllium	ND	0.00088	0.0020		mg/L	1	3/18/2021 10:26:56 AM	A76034
Boron	1.7	0.033	0.20		mg/L	5	3/18/2021 10:28:28 AM	A76034
Cadmium	ND	0.0012	0.0020		mg/L	1	3/18/2021 10:26:56 AM	A76034
Calcium	8.0	0.11	1.0		mg/L	1	3/18/2021 10:26:56 AM	A76034
Chromium	0.0035	0.0020	0.0060	J	mg/L	1	3/18/2021 10:26:56 AM	A76034
Cobalt	ND	0.0024	0.0060		mg/L	1	3/18/2021 10:26:56 AM	A76034
Copper	ND	0.0035	0.0060		mg/L	1	3/18/2021 10:26:56 AM	A76034
Iron	0.093	0.010	0.020		mg/L	1	3/18/2021 10:26:56 AM	A76034
Magnesium	0.51	0.067	1.0	J	mg/L	1	3/18/2021 10:26:56 AM	A76034
Manganese	0.0053	0.00058	0.0020		mg/L	1	3/18/2021 10:26:56 AM	A76034
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/18/2021 10:26:56 AM	A76034
Nickel	ND	0.0033	0.010		mg/L	1	3/18/2021 10:26:56 AM	A76034
Potassium	1.1	0.16	1.0		mg/L	1	3/18/2021 10:26:56 AM	A76034
Silver	ND	0.0013	0.0050		mg/L	1	3/18/2021 10:26:56 AM	A76034
Sodium	490	0.69	5.0		mg/L	5	3/18/2021 10:28:28 AM	A76034
Zinc	0.0088	0.0060	0.010	J	mg/L	1	3/18/2021 10:26:56 AM	A76034
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 4:33:33 PM	B75953
Arsenic	0.012	0.00021	0.0010	*	mg/L	1	3/15/2021 4:33:33 PM	B75953
Lead	0.00027	0.000034	0.00050	J	mg/L	1	3/15/2021 4:33:33 PM	B75953
Selenium	0.010	0.00066	0.0010		mg/L	1	3/16/2021 1:34:10 PM	B75975
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 4:33:33 PM	B75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:45:56 PM	58801

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-44
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-002F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	6.1	0.074	0.20	*	mg/L	10	3/16/2021 12:54:14 PM	58726
Barium	0.12	0.0016	0.0030		mg/L	1	3/16/2021 11:51:09 AM	58726
Beryllium	ND	0.00088	0.0020		mg/L	1	3/16/2021 11:51:09 AM	58726
Boron	1.9	0.037	0.20		mg/L	5	3/16/2021 11:52:28 AM	58726
Cadmium	ND	0.0015	0.0020		mg/L	1	3/16/2021 11:51:09 AM	58726
Chromium	0.0099	0.0021	0.0060		mg/L	1	3/16/2021 11:51:09 AM	58726
Cobalt	0.0036	0.0024	0.0060	J	mg/L	1	3/16/2021 11:51:09 AM	58726
Copper	0.0069	0.0047	0.0060		mg/L	1	3/16/2021 11:51:09 AM	58726
Iron	6.5	0.13	0.50	*	mg/L	10	3/16/2021 12:54:14 PM	58726
Manganese	0.12	0.00081	0.0020	*	mg/L	1	3/16/2021 11:51:09 AM	58726
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/16/2021 11:51:09 AM	58726
Nickel	ND	0.0033	0.010		mg/L	1	3/16/2021 11:51:09 AM	58726
Silver	ND	0.0013	0.0050		mg/L	1	3/16/2021 11:51:09 AM	58726
Zinc	0.023	0.0064	0.010		mg/L	1	3/16/2021 11:51:09 AM	58726
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/16/2021 4:42:59 PM	58726
Arsenic	0.012	0.00026	0.0010	*	mg/L	1	3/16/2021 4:42:59 PM	58726
Lead	0.0071	0.000034	0.00050		mg/L	1	3/16/2021 4:42:59 PM	58726
Selenium	0.012	0.00066	0.0010		mg/L	1	3/16/2021 4:42:59 PM	58726
Thallium	ND	0.00025	0.00025		mg/L	1	3/16/2021 4:42:59 PM	58726
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/17/2021 2:34:52 PM	58766

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-47
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:25:00 AM
Lab ID: 2103612-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Toluene	ND	0.20	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Naphthalene	ND	0.28	2.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Acetone	ND	2.3	10		µg/L	1	3/18/2021 5:10:12 PM	A76055
Bromobenzene	ND	0.28	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Bromodichloromethane	0.25	0.20	1.0	J	µg/L	1	3/18/2021 5:10:12 PM	A76055
Bromoform	ND	0.31	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Bromomethane	ND	1.6	3.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
2-Butanone	ND	1.1	10		µg/L	1	3/18/2021 5:10:12 PM	A76055
Carbon disulfide	ND	0.44	10		µg/L	1	3/18/2021 5:10:12 PM	A76055
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Chloroethane	ND	0.38	2.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Chloroform	0.32	0.13	1.0	J	µg/L	1	3/18/2021 5:10:12 PM	A76055
Chloromethane	ND	0.40	3.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Dibromomethane	ND	0.31	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-47
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:25:00 AM
Lab ID: 2103612-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
2-Hexanone	ND	1.8	10		µg/L	1	3/18/2021 5:10:12 PM	A76055
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/18/2021 5:10:12 PM	A76055
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Styrene	ND	0.13	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/18/2021 5:10:12 PM	A76055
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/18/2021 5:10:12 PM	A76055
Surr: 1,2-Dichloroethane-d4	95.1	0	70-130		%Rec	1	3/18/2021 5:10:12 PM	A76055
Surr: 4-Bromofluorobenzene	89.2	0	70-130		%Rec	1	3/18/2021 5:10:12 PM	A76055
Surr: Dibromofluoromethane	92.6	0	70-130		%Rec	1	3/18/2021 5:10:12 PM	A76055
Surr: Toluene-d8	79.6	0	70-130		%Rec	1	3/18/2021 5:10:12 PM	A76055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.016	0.0080	0.050	J	mg/L	1	3/18/2021 5:10:12 PM	B76055
Surr: BFB	97.1	0	70-130		%Rec	1	3/18/2021 5:10:12 PM	B76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-47
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:25:00 AM
Lab ID: 2103612-003B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	ND	0.075	0.085		mg/L	1	3/23/2021 11:07:27 PM	58760
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 11:07:27 PM	58760
Surr: DNOP	94.2	0	45.1-141		%Rec	1	3/23/2021 11:07:27 PM	58760

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-47
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:25:00 AM
Lab ID: 2103612-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Azobenzene	ND	0.55	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Benzoic acid	ND	1.1	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Bis(2-ethylhexyl)phthalate	6.4	4.5	10	J	µg/L	1	3/18/2021 4:17:13 AM	58720
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Carbazole	ND	0.56	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/18/2021 4:17:13 AM	58720
Di-n-octyl phthalate	9.2	3.1	10	J	µg/L	1	3/18/2021 4:17:13 AM	58720
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Diethyl phthalate	ND	3.9	10		µg/L	1	3/18/2021 4:17:13 AM	58720
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/18/2021 4:17:13 AM	58720
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Isophorone	ND	0.40	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-47
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:25:00 AM
Lab ID: 2103612-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Phenol	ND	0.33	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Pyridine	ND	0.93	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/18/2021 4:17:13 AM	58720
Surr: 2-Fluorophenol	53.1	0	15-88.8		%Rec	1	3/18/2021 4:17:13 AM	58720
Surr: Phenol-d5	41.7	0	15-71.9		%Rec	1	3/18/2021 4:17:13 AM	58720
Surr: 2,4,6-Tribromophenol	44.3	0	15-97.4		%Rec	1	3/18/2021 4:17:13 AM	58720
Surr: Nitrobenzene-d5	59.8	0	15-117		%Rec	1	3/18/2021 4:17:13 AM	58720
Surr: 2-Fluorobiphenyl	61.0	0	15-100		%Rec	1	3/18/2021 4:17:13 AM	58720
Surr: 4-Terphenyl-d14	81.2	0	15-120		%Rec	1	3/18/2021 4:17:13 AM	58720
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	2.2	0.048	1.0		µg/L	1	3/22/2021 2:27:00 PM	58715
Naphthalene	ND	0.034	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
Acenaphthene	ND	0.031	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
Fluorene	ND	0.031	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
Phenanthrene	ND	0.057	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
Anthracene	ND	0.034	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
Fluoranthene	ND	0.10	0.20		µg/L	1	3/22/2021 2:27:00 PM	58715
Pyrene	ND	0.16	0.20		µg/L	1	3/22/2021 2:27:00 PM	58715
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
Chrysene	ND	0.024	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/22/2021 2:27:00 PM	58715
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/22/2021 2:27:00 PM	58715
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/22/2021 2:27:00 PM	58715
Surr: Nitrobenzene-d5	92.5	0	26.3-112		%Rec	1	3/22/2021 2:27:00 PM	58715

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-47
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:25:00 AM
Lab ID: 2103612-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 2-Fluorobiphenyl	83.5	0	21.1-110		%Rec	1	3/22/2021 2:27:00 PM	58715
Surr: 4-Terphenyl-d14	99.5	0	17.6-167		%Rec	1	3/22/2021 2:27:00 PM	58715

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-47
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:25:00 AM
Lab ID: 2103612-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.69	0.043	0.10		mg/L	1	3/11/2021 7:19:52 PM	R75904
Chloride	400	12	25	*	mg/L	50	3/12/2021 9:54:17 PM	R75934
Nitrogen, Nitrite (As N)	ND	0.28	2.0		mg/L	20	3/11/2021 7:32:44 PM	R75904
Bromide	0.50	0.050	0.10		mg/L	1	3/11/2021 7:19:52 PM	R75904
Nitrogen, Nitrate (As N)	9.7	0.40	2.0		mg/L	20	3/11/2021 7:32:44 PM	R75904
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	3/11/2021 7:19:52 PM	R75904
Sulfate	310	5.0	10	*	mg/L	20	3/11/2021 7:32:44 PM	R75904

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-47
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:25:00 AM
Lab ID: 2103612-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/19/2021 8:30:05 AM	A76065
Barium	0.027	0.0011	0.0020		mg/L	1	3/18/2021 10:30:01 AM	A76034
Beryllium	ND	0.00088	0.0020		mg/L	1	3/18/2021 10:30:01 AM	A76034
Boron	0.27	0.0067	0.040		mg/L	1	3/18/2021 10:30:01 AM	A76034
Cadmium	ND	0.0012	0.0020		mg/L	1	3/18/2021 10:30:01 AM	A76034
Calcium	140	0.57	5.0		mg/L	5	3/18/2021 10:31:36 AM	A76034
Chromium	0.0033	0.0020	0.0060	J	mg/L	1	3/18/2021 10:30:01 AM	A76034
Cobalt	ND	0.0024	0.0060		mg/L	1	3/18/2021 10:30:01 AM	A76034
Copper	ND	0.0035	0.0060		mg/L	1	3/18/2021 10:30:01 AM	A76034
Iron	ND	0.010	0.020		mg/L	1	3/18/2021 10:30:01 AM	A76034
Magnesium	31	0.067	1.0		mg/L	1	3/18/2021 10:30:01 AM	A76034
Manganese	ND	0.00058	0.0020		mg/L	1	3/18/2021 10:30:01 AM	A76034
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/18/2021 10:30:01 AM	A76034
Nickel	ND	0.0033	0.010		mg/L	1	3/18/2021 10:30:01 AM	A76034
Potassium	3.3	0.16	1.0		mg/L	1	3/18/2021 10:30:01 AM	A76034
Silver	0.0021	0.0013	0.0050	J	mg/L	1	3/18/2021 10:30:01 AM	A76034
Sodium	310	0.69	5.0		mg/L	5	3/18/2021 10:31:36 AM	A76034
Zinc	0.0080	0.0060	0.010	J	mg/L	1	3/18/2021 10:30:01 AM	A76034
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 4:36:16 PM	B75953
Arsenic	0.00051	0.00021	0.0010	J	mg/L	1	3/15/2021 4:36:16 PM	B75953
Lead	ND	0.000034	0.00050		mg/L	1	3/15/2021 4:36:16 PM	B75953
Selenium	0.0050	0.00066	0.0010		mg/L	1	3/16/2021 1:36:52 PM	B75975
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 4:36:16 PM	B75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:48:21 PM	58801

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-47
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:25:00 AM
Lab ID: 2103612-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	2.4	0.037	0.10	*	mg/L	5	3/16/2021 11:55:27 AM	58726
Barium	0.11	0.0016	0.0030		mg/L	1	3/16/2021 11:54:05 AM	58726
Beryllium	ND	0.00088	0.0020		mg/L	1	3/16/2021 11:54:05 AM	58726
Boron	0.28	0.0074	0.040		mg/L	1	3/16/2021 11:54:05 AM	58726
Cadmium	ND	0.0015	0.0020		mg/L	1	3/16/2021 11:54:05 AM	58726
Chromium	0.011	0.0021	0.0060		mg/L	1	3/16/2021 11:54:05 AM	58726
Cobalt	ND	0.0024	0.0060		mg/L	1	3/16/2021 11:54:05 AM	58726
Copper	ND	0.0047	0.0060		mg/L	1	3/16/2021 11:54:05 AM	58726
Iron	1.3	0.064	0.25	*	mg/L	5	3/16/2021 11:55:27 AM	58726
Manganese	0.071	0.00081	0.0020	*	mg/L	1	3/16/2021 11:54:05 AM	58726
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/16/2021 11:54:05 AM	58726
Nickel	ND	0.0033	0.010		mg/L	1	3/16/2021 11:54:05 AM	58726
Silver	0.0030	0.0013	0.0050	J	mg/L	1	3/16/2021 11:54:05 AM	58726
Zinc	ND	0.0064	0.010		mg/L	1	3/16/2021 11:54:05 AM	58726
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/16/2021 4:50:10 PM	58726
Arsenic	0.00063	0.00026	0.0010	J	mg/L	1	3/16/2021 4:50:10 PM	58726
Lead	0.00096	0.000034	0.00050		mg/L	1	3/16/2021 4:50:10 PM	58726
Selenium	0.0053	0.00066	0.0010		mg/L	1	3/16/2021 4:50:10 PM	58726
Thallium	ND	0.00025	0.00025		mg/L	1	3/16/2021 4:50:10 PM	58726
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/17/2021 2:37:18 PM	58766

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:10:00 AM
Lab ID: 2103612-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Toluene	ND	0.20	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Methyl tert-butyl ether (MTBE)	0.46	0.39	1.0	J	µg/L	1	3/18/2021 5:37:13 PM	A76055
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Naphthalene	ND	0.28	2.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Acetone	ND	2.3	10		µg/L	1	3/18/2021 5:37:13 PM	A76055
Bromobenzene	ND	0.28	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Bromoform	ND	0.31	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Bromomethane	ND	1.6	3.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
2-Butanone	ND	1.1	10		µg/L	1	3/18/2021 5:37:13 PM	A76055
Carbon disulfide	ND	0.44	10		µg/L	1	3/18/2021 5:37:13 PM	A76055
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Chloroethane	ND	0.38	2.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Chloroform	0.51	0.13	1.0	J	µg/L	1	3/18/2021 5:37:13 PM	A76055
Chloromethane	ND	0.40	3.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Dibromomethane	ND	0.31	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,1-Dichloroethane	0.40	0.27	1.0	J	µg/L	1	3/18/2021 5:37:13 PM	A76055
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:10:00 AM
Lab ID: 2103612-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
2-Hexanone	ND	1.8	10		µg/L	1	3/18/2021 5:37:13 PM	A76055
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/18/2021 5:37:13 PM	A76055
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Styrene	ND	0.13	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Tetrachloroethene (PCE)	0.42	0.36	1.0	J	µg/L	1	3/18/2021 5:37:13 PM	A76055
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/18/2021 5:37:13 PM	A76055
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/18/2021 5:37:13 PM	A76055
Surr: 1,2-Dichloroethane-d4	92.2	0	70-130		%Rec	1	3/18/2021 5:37:13 PM	A76055
Surr: 4-Bromofluorobenzene	85.7	0	70-130		%Rec	1	3/18/2021 5:37:13 PM	A76055
Surr: Dibromofluoromethane	95.5	0	70-130		%Rec	1	3/18/2021 5:37:13 PM	A76055
Surr: Toluene-d8	85.5	0	70-130		%Rec	1	3/18/2021 5:37:13 PM	A76055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.020	0.0080	0.050	J	mg/L	1	3/18/2021 5:37:13 PM	B76055
Surr: BFB	94.7	0	70-130		%Rec	1	3/18/2021 5:37:13 PM	B76055

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:10:00 AM
Lab ID: 2103612-004B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	ND	0.075	0.085		mg/L	1	3/23/2021 11:30:58 PM	58760
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 11:30:58 PM	58760
Surr: DNOP	95.1	0	45.1-141		%Rec	1	3/23/2021 11:30:58 PM	58760

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:10:00 AM
Lab ID: 2103612-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Azobenzene	ND	0.55	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Benzoic acid	ND	1.1	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Bis(2-ethylhexyl)phthalate	6.9	4.5	10	J	µg/L	1	3/22/2021 5:01:55 PM	58736
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Carbazole	ND	0.56	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Di-n-butyl phthalate	6.7	6.5	10	J	µg/L	1	3/22/2021 5:01:55 PM	58736
Di-n-octyl phthalate	9.2	3.1	10	J	µg/L	1	3/22/2021 5:01:55 PM	58736
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Diethyl phthalate	ND	3.9	10		µg/L	1	3/22/2021 5:01:55 PM	58736
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/22/2021 5:01:55 PM	58736
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Isophorone	ND	0.40	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:10:00 AM
Lab ID: 2103612-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Phenol	ND	0.33	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Pyridine	ND	0.93	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/22/2021 5:01:55 PM	58736
Surr: 2-Fluorophenol	70.2	0	15-88.8		%Rec	1	3/22/2021 5:01:55 PM	58736
Surr: Phenol-d5	54.2	0	15-71.9		%Rec	1	3/22/2021 5:01:55 PM	58736
Surr: 2,4,6-Tribromophenol	69.2	0	15-97.4		%Rec	1	3/22/2021 5:01:55 PM	58736
Surr: Nitrobenzene-d5	73.2	0	15-117		%Rec	1	3/22/2021 5:01:55 PM	58736
Surr: 2-Fluorobiphenyl	79.2	0	15-100		%Rec	1	3/22/2021 5:01:55 PM	58736
Surr: 4-Terphenyl-d14	105	0	15-120		%Rec	1	3/22/2021 5:01:55 PM	58736
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.48	0.048	1.0	J	µg/L	1	3/22/2021 3:11:00 PM	58715
Naphthalene	ND	0.034	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
Acenaphthene	ND	0.031	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
Fluorene	ND	0.031	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
Phenanthrene	ND	0.057	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
Anthracene	ND	0.034	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
Fluoranthene	ND	0.10	0.20		µg/L	1	3/22/2021 3:11:00 PM	58715
Pyrene	ND	0.16	0.20		µg/L	1	3/22/2021 3:11:00 PM	58715
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
Chrysene	ND	0.024	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/22/2021 3:11:00 PM	58715
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/22/2021 3:11:00 PM	58715
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/22/2021 3:11:00 PM	58715
Surr: Nitrobenzene-d5	77.0	0	26.3-112		%Rec	1	3/22/2021 3:11:00 PM	58715

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:10:00 AM
Lab ID: 2103612-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 2-Fluorobiphenyl	70.0	0	21.1-110		%Rec	1	3/22/2021 3:11:00 PM	58715
Surr: 4-Terphenyl-d14	98.0	0	17.6-167		%Rec	1	3/22/2021 3:11:00 PM	58715

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:10:00 AM
Lab ID: 2103612-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.59	0.043	0.10		mg/L	1	3/11/2021 8:11:23 PM	R75904
Chloride	410	12	25	*	mg/L	50	3/12/2021 10:07:10 PM	R75934
Nitrogen, Nitrite (As N)	ND	0.28	2.0		mg/L	20	3/11/2021 8:24:16 PM	R75904
Bromide	0.54	0.050	0.10		mg/L	1	3/11/2021 8:11:23 PM	R75904
Nitrogen, Nitrate (As N)	8.3	0.40	2.0		mg/L	20	3/11/2021 8:24:16 PM	R75904
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	3/11/2021 8:11:23 PM	R75904
Sulfate	500	5.0	10	*	mg/L	20	3/11/2021 8:24:16 PM	R75904

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:10:00 AM
Lab ID: 2103612-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.021	0.0056	0.020		mg/L	1	3/19/2021 8:34:53 AM	A76065
Barium	0.025	0.0011	0.0020		mg/L	1	3/18/2021 10:33:12 AM	A76034
Beryllium	ND	0.00088	0.0020		mg/L	1	3/18/2021 10:33:12 AM	A76034
Boron	0.44	0.0067	0.040		mg/L	1	3/18/2021 10:33:12 AM	A76034
Cadmium	ND	0.0012	0.0020		mg/L	1	3/18/2021 10:33:12 AM	A76034
Calcium	210	0.57	5.0		mg/L	5	3/18/2021 10:34:46 AM	A76034
Chromium	ND	0.0020	0.0060		mg/L	1	3/18/2021 10:33:12 AM	A76034
Cobalt	ND	0.0024	0.0060		mg/L	1	3/18/2021 10:33:12 AM	A76034
Copper	ND	0.0035	0.0060		mg/L	1	3/18/2021 10:33:12 AM	A76034
Iron	0.012	0.010	0.020	J	mg/L	1	3/18/2021 10:33:12 AM	A76034
Magnesium	39	0.067	1.0		mg/L	1	3/18/2021 10:33:12 AM	A76034
Manganese	0.078	0.00058	0.0020	*	mg/L	1	3/18/2021 10:33:12 AM	A76034
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/18/2021 10:33:12 AM	A76034
Nickel	ND	0.0033	0.010		mg/L	1	3/18/2021 10:33:12 AM	A76034
Potassium	0.54	0.16	1.0	J	mg/L	1	3/18/2021 10:33:12 AM	A76034
Silver	0.0031	0.0013	0.0050	J	mg/L	1	3/18/2021 10:33:12 AM	A76034
Sodium	340	0.69	5.0		mg/L	5	3/18/2021 10:34:46 AM	A76034
Zinc	0.012	0.0060	0.010		mg/L	1	3/19/2021 8:34:53 AM	A76065
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 4:38:59 PM	B75953
Arsenic	0.00049	0.00021	0.0010	J	mg/L	1	3/15/2021 4:38:59 PM	B75953
Lead	0.000038	0.000034	0.00050	J	mg/L	1	3/15/2021 4:38:59 PM	B75953
Selenium	0.0049	0.00066	0.0010		mg/L	1	3/16/2021 1:39:36 PM	B75975
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 4:38:59 PM	B75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:50:44 PM	58801

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-38
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:10:00 AM
Lab ID: 2103612-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.73	0.0074	0.020	*	mg/L	1	3/16/2021 11:57:01 AM	58726
Barium	0.027	0.0016	0.0030		mg/L	1	3/16/2021 11:57:01 AM	58726
Beryllium	ND	0.00088	0.0020		mg/L	1	3/16/2021 11:57:01 AM	58726
Boron	0.45	0.0074	0.040		mg/L	1	3/16/2021 11:57:01 AM	58726
Cadmium	ND	0.0015	0.0020		mg/L	1	3/16/2021 11:57:01 AM	58726
Chromium	ND	0.0021	0.0060		mg/L	1	3/16/2021 11:57:01 AM	58726
Cobalt	ND	0.0024	0.0060		mg/L	1	3/16/2021 11:57:01 AM	58726
Copper	ND	0.0047	0.0060		mg/L	1	3/16/2021 11:57:01 AM	58726
Iron	0.22	0.013	0.050		mg/L	1	3/16/2021 11:57:01 AM	58726
Manganese	0.24	0.00081	0.0020	*	mg/L	1	3/16/2021 11:57:01 AM	58726
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/16/2021 11:57:01 AM	58726
Nickel	ND	0.0033	0.010		mg/L	1	3/16/2021 11:57:01 AM	58726
Silver	0.0042	0.0013	0.0050	J	mg/L	1	3/16/2021 11:57:01 AM	58726
Zinc	ND	0.0064	0.010		mg/L	1	3/16/2021 11:57:01 AM	58726
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/16/2021 4:52:33 PM	58726
Arsenic	0.00053	0.00026	0.0010	J	mg/L	1	3/16/2021 4:52:33 PM	58726
Lead	0.00016	0.000034	0.00050	J	mg/L	1	3/16/2021 4:52:33 PM	58726
Selenium	0.0052	0.00066	0.0010		mg/L	1	3/16/2021 4:52:33 PM	58726
Thallium	ND	0.00025	0.00025		mg/L	1	3/16/2021 4:52:33 PM	58726
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/17/2021 2:39:41 PM	58766

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:15:00 AM
Lab ID: 2103612-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	3400	23	100		µg/L	100	3/19/2021 11:25:30 AM	A76093
Toluene	100	2.0	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Ethylbenzene	520	2.1	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Methyl tert-butyl ether (MTBE)	110	3.9	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,2,4-Trimethylbenzene	240	1.2	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,3,5-Trimethylbenzene	13	1.8	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,2-Dichloroethane (EDC)	ND	2.2	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Naphthalene	53	2.8	20		µg/L	10	3/18/2021 6:04:14 PM	A76055
1-Methylnaphthalene	ND	8.4	40		µg/L	10	3/18/2021 6:04:14 PM	A76055
2-Methylnaphthalene	7.7	6.9	40	J	µg/L	10	3/18/2021 6:04:14 PM	A76055
Acetone	ND	23	100		µg/L	10	3/18/2021 6:04:14 PM	A76055
Bromobenzene	ND	2.8	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Bromodichloromethane	ND	2.0	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Bromoform	ND	3.1	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Bromomethane	ND	16	30		µg/L	10	3/18/2021 6:04:14 PM	A76055
2-Butanone	ND	11	100		µg/L	10	3/18/2021 6:04:14 PM	A76055
Carbon disulfide	ND	4.4	100		µg/L	10	3/18/2021 6:04:14 PM	A76055
Carbon Tetrachloride	ND	1.8	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Chlorobenzene	ND	1.4	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Chloroethane	ND	3.8	20		µg/L	10	3/18/2021 6:04:14 PM	A76055
Chloroform	ND	1.3	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Chloromethane	ND	4.0	30		µg/L	10	3/18/2021 6:04:14 PM	A76055
2-Chlorotoluene	ND	1.3	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
4-Chlorotoluene	ND	5.1	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
cis-1,2-DCE	ND	3.9	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	3/18/2021 6:04:14 PM	A76055
Dibromochloromethane	ND	2.8	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Dibromomethane	ND	3.1	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Dichlorodifluoromethane	ND	4.4	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,1-Dichloroethane	ND	2.7	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,1-Dichloroethene	ND	1.3	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,2-Dichloropropane	ND	1.3	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,3-Dichloropropane	ND	1.8	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
2,2-Dichloropropane	ND	2.6	20		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,1-Dichloropropene	ND	1.8	10		µg/L	10	3/18/2021 6:04:14 PM	A76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:15:00 AM
Lab ID: 2103612-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	3.3	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
2-Hexanone	ND	18	100		µg/L	10	3/18/2021 6:04:14 PM	A76055
Isopropylbenzene	19	1.8	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
4-Isopropyltoluene	ND	2.0	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
4-Methyl-2-pentanone	ND	11	100		µg/L	10	3/18/2021 6:04:14 PM	A76055
Methylene Chloride	ND	4.0	30		µg/L	10	3/18/2021 6:04:14 PM	A76055
n-Butylbenzene	3.1	2.5	30	J	µg/L	10	3/18/2021 6:04:14 PM	A76055
n-Propylbenzene	52	1.8	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
sec-Butylbenzene	ND	6.1	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Styrene	ND	1.3	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
tert-Butylbenzene	ND	2.4	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	3/18/2021 6:04:14 PM	A76055
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
trans-1,2-DCE	ND	4.9	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,2,3-Trichlorobenzene	ND	1.3	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,1,2-Trichloroethane	ND	1.9	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Trichlorofluoromethane	ND	0.92	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	3/18/2021 6:04:14 PM	A76055
Vinyl chloride	ND	2.0	10		µg/L	10	3/18/2021 6:04:14 PM	A76055
Xylenes, Total	940	5.5	15		µg/L	10	3/18/2021 6:04:14 PM	A76055
Surr: 1,2-Dichloroethane-d4	89.5	0	70-130		%Rec	10	3/18/2021 6:04:14 PM	A76055
Surr: 4-Bromofluorobenzene	86.1	0	70-130		%Rec	10	3/18/2021 6:04:14 PM	A76055
Surr: Dibromofluoromethane	90.7	0	70-130		%Rec	10	3/18/2021 6:04:14 PM	A76055
Surr: Toluene-d8	85.0	0	70-130		%Rec	10	3/18/2021 6:04:14 PM	A76055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	15	0.080	0.50		mg/L	10	3/18/2021 6:04:14 PM	B76055
Surr: BFB	94.4	0	70-130		%Rec	10	3/18/2021 6:04:14 PM	B76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:15:00 AM
Lab ID: 2103612-005B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.82	0.075	0.085		mg/L	1	3/23/2021 11:54:29 PM	58760
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/23/2021 11:54:29 PM	58760
Surr: DNOP	93.5	0	45.1-141		%Rec	1	3/23/2021 11:54:29 PM	58760

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:15:00 AM
Lab ID: 2103612-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Azobenzene	ND	0.55	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Benzoic acid	ND	1.1	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Bis(2-ethylhexyl)phthalate	7.1	4.5	10	J	µg/L	1	3/22/2021 5:43:15 PM	58736
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Carbazole	3.9	0.56	5.0	J	µg/L	1	3/22/2021 5:43:15 PM	58736
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Di-n-butyl phthalate	6.7	6.5	10	J	µg/L	1	3/22/2021 5:43:15 PM	58736
Di-n-octyl phthalate	9.2	3.1	10	J	µg/L	1	3/22/2021 5:43:15 PM	58736
Dibenzofuran	3.1	0.38	5.0	J	µg/L	1	3/22/2021 5:43:15 PM	58736
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
1,4-Dichlorobenzene	1.2	0.70	5.0	J	µg/L	1	3/22/2021 5:43:15 PM	58736
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Diethyl phthalate	ND	3.9	10		µg/L	1	3/22/2021 5:43:15 PM	58736
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/22/2021 5:43:15 PM	58736
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
2,4-Dimethylphenol	5.5	0.97	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Isophorone	ND	0.40	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
2-Methylphenol	1.1	0.51	5.0	J	µg/L	1	3/22/2021 5:43:15 PM	58736
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:15:00 AM
Lab ID: 2103612-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Phenol	41	0.33	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Pyridine	ND	0.93	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/22/2021 5:43:15 PM	58736
Surr: 2-Fluorophenol	0	0	15-88.8	S	%Rec	1	3/22/2021 5:43:15 PM	58736
Surr: Phenol-d5	45.2	0	15-71.9		%Rec	1	3/22/2021 5:43:15 PM	58736
Surr: 2,4,6-Tribromophenol	88.6	0	15-97.4		%Rec	1	3/22/2021 5:43:15 PM	58736
Surr: Nitrobenzene-d5	70.7	0	15-117		%Rec	1	3/22/2021 5:43:15 PM	58736
Surr: 2-Fluorobiphenyl	72.2	0	15-100		%Rec	1	3/22/2021 5:43:15 PM	58736
Surr: 4-Terphenyl-d14	114	0	15-120		%Rec	1	3/22/2021 5:43:15 PM	58736
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	39	0.34	1.0		µg/L	10	3/23/2021 10:16:00 AM	58715
1-Methylnaphthalene	5.1	0.024	0.10		µg/L	1	3/22/2021 3:54:00 PM	58715
2-Methylnaphthalene	5.8	0.034	0.10		µg/L	1	3/22/2021 3:54:00 PM	58715
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/22/2021 3:54:00 PM	58715
Acenaphthene	1.7	0.031	0.10		µg/L	1	3/22/2021 3:54:00 PM	58715
Fluorene	0.26	0.031	0.10		µg/L	1	3/22/2021 3:54:00 PM	58715
Phenanthrene	ND	0.057	0.10		µg/L	1	3/22/2021 3:54:00 PM	58715
Anthracene	0.34	0.034	0.10		µg/L	1	3/22/2021 3:54:00 PM	58715
Fluoranthene	ND	0.10	0.20		µg/L	1	3/22/2021 3:54:00 PM	58715
Pyrene	ND	0.16	0.20		µg/L	1	3/22/2021 3:54:00 PM	58715
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/22/2021 3:54:00 PM	58715
Chrysene	ND	0.024	0.10		µg/L	1	3/22/2021 3:54:00 PM	58715
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/22/2021 3:54:00 PM	58715
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/22/2021 3:54:00 PM	58715
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/22/2021 3:54:00 PM	58715
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/22/2021 3:54:00 PM	58715
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/22/2021 3:54:00 PM	58715
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/22/2021 3:54:00 PM	58715
Surr: Nitrobenzene-d5	4.00	0	26.3-112	S	%Rec	1	3/22/2021 3:54:00 PM	58715
Surr: 2-Fluorobiphenyl	60.0	0	21.1-110		%Rec	1	3/22/2021 3:54:00 PM	58715

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:15:00 AM
Lab ID: 2103612-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	85.0	0	17.6-167		%Rec	1	3/22/2021 3:54:00 PM	58715

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:15:00 AM
Lab ID: 2103612-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0063	0.0095		µg/L	1	3/16/2021 8:15:56 PM	58711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:15:00 AM
Lab ID: 2103612-005E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.59	0.22	0.50		mg/L	5	3/11/2021 8:37:09 PM	R75904
Chloride	360	5.0	10	*	mg/L	20	3/11/2021 8:50:01 PM	R75904
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/11/2021 8:37:09 PM	R75904
Bromide	0.80	0.25	0.50		mg/L	5	3/11/2021 8:37:09 PM	R75904
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	3/11/2021 8:37:09 PM	R75904
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/11/2021 8:37:09 PM	R75904
Sulfate	ND	1.2	2.5		mg/L	5	3/11/2021 8:37:09 PM	R75904

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:15:00 AM
Lab ID: 2103612-005F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.14	0.0056	0.020		mg/L	1	3/19/2021 8:41:23 AM	A76065
Barium	2.6	0.0056	0.010	*	mg/L	5	3/18/2021 10:37:43 AM	A76034
Beryllium	ND	0.00088	0.0020		mg/L	1	3/18/2021 10:36:22 AM	A76034
Boron	0.26	0.0067	0.040		mg/L	1	3/18/2021 10:36:22 AM	A76034
Cadmium	ND	0.0012	0.0020		mg/L	1	3/18/2021 10:36:22 AM	A76034
Calcium	180	0.57	5.0		mg/L	5	3/18/2021 10:37:43 AM	A76034
Chromium	ND	0.0020	0.0060		mg/L	1	3/18/2021 10:36:22 AM	A76034
Cobalt	ND	0.0024	0.0060		mg/L	1	3/18/2021 10:36:22 AM	A76034
Copper	0.0054	0.0035	0.0060	J	mg/L	1	3/18/2021 10:36:22 AM	A76034
Iron	4.8	0.052	0.10	*	mg/L	5	3/18/2021 10:37:43 AM	A76034
Magnesium	51	0.067	1.0		mg/L	1	3/18/2021 10:36:22 AM	A76034
Manganese	3.0	0.0029	0.010	*	mg/L	5	3/18/2021 10:37:43 AM	A76034
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/18/2021 10:36:22 AM	A76034
Nickel	0.0034	0.0033	0.010	J	mg/L	1	3/18/2021 10:36:22 AM	A76034
Potassium	0.48	0.16	1.0	J	mg/L	1	3/18/2021 10:36:22 AM	A76034
Silver	0.0023	0.0013	0.0050	J	mg/L	1	3/18/2021 10:36:22 AM	A76034
Sodium	220	0.69	5.0		mg/L	5	3/18/2021 10:37:43 AM	A76034
Zinc	0.012	0.0060	0.010		mg/L	1	3/22/2021 8:42:41 AM	A76106
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 4:41:42 PM	B75953
Arsenic	0.00029	0.00021	0.0010	J	mg/L	1	3/15/2021 4:41:42 PM	B75953
Lead	0.00029	0.000034	0.00050	J	mg/L	1	3/15/2021 4:41:42 PM	B75953
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 4:41:42 PM	B75953
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 4:41:42 PM	B75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 3:57:57 PM	58801

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-35
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:15:00 AM
Lab ID: 2103612-005G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	21	0.37	1.0	*	mg/L	50	3/16/2021 12:57:10 PM	58726
Barium	5.8	0.016	0.030	*	mg/L	10	3/16/2021 12:55:48 PM	58726
Beryllium	ND	0.00088	0.0020		mg/L	1	3/16/2021 12:05:31 PM	58726
Boron	0.26	0.0074	0.040		mg/L	1	3/16/2021 12:05:31 PM	58726
Cadmium	ND	0.0015	0.0020		mg/L	1	3/16/2021 12:05:31 PM	58726
Chromium	0.0097	0.0021	0.0060		mg/L	1	3/16/2021 12:05:31 PM	58726
Cobalt	0.014	0.0024	0.0060		mg/L	1	3/16/2021 12:05:31 PM	58726
Copper	0.012	0.0047	0.0060		mg/L	1	3/16/2021 12:05:31 PM	58726
Iron	15	0.64	2.5	*	mg/L	50	3/16/2021 12:57:10 PM	58726
Manganese	5.2	0.0081	0.020	*	mg/L	10	3/16/2021 12:55:48 PM	58726
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/16/2021 12:05:31 PM	58726
Nickel	0.014	0.0033	0.010		mg/L	1	3/16/2021 12:05:31 PM	58726
Silver	0.0032	0.0013	0.0050	J	mg/L	1	3/16/2021 12:05:31 PM	58726
Zinc	0.027	0.0064	0.010		mg/L	1	3/16/2021 12:05:31 PM	58726
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0035	0.0050		mg/L	5	3/16/2021 5:21:14 PM	58726
Arsenic	0.0040	0.00026	0.0010		mg/L	1	3/16/2021 4:54:56 PM	58726
Lead	0.015	0.00017	0.0025	*	mg/L	5	3/16/2021 5:21:14 PM	58726
Selenium	0.0020	0.00066	0.0010		mg/L	1	3/16/2021 4:54:56 PM	58726
Thallium	ND	0.00025	0.00025		mg/L	1	3/16/2021 4:54:56 PM	58726
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/17/2021 2:42:04 PM	58766

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:45:00 AM
Lab ID: 2103612-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	560	45	200		µg/L	200	3/19/2021 11:52:34 AM	A76093
Toluene	1.3	0.20	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Ethylbenzene	1.4	0.21	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Methyl tert-butyl ether (MTBE)	98	0.39	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,2,4-Trimethylbenzene	1.2	0.12	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,2-Dichloroethane (EDC)	0.42	0.22	1.0	J	µg/L	1	3/18/2021 6:31:16 PM	A76055
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Naphthalene	16	0.28	2.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1-Methylnaphthalene	89	0.84	4.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
2-Methylnaphthalene	21	0.69	4.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Acetone	ND	2.3	10		µg/L	1	3/18/2021 6:31:16 PM	A76055
Bromobenzene	ND	0.28	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Bromoform	ND	0.31	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Bromomethane	ND	1.6	3.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
2-Butanone	ND	1.1	10		µg/L	1	3/18/2021 6:31:16 PM	A76055
Carbon disulfide	ND	0.44	10		µg/L	1	3/18/2021 6:31:16 PM	A76055
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Chloroethane	ND	0.38	2.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Chloroform	ND	0.13	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Chloromethane	ND	0.40	3.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
cis-1,2-DCE	1.4	0.39	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Dibromomethane	ND	0.31	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,1-Dichloroethane	0.57	0.27	1.0	J	µg/L	1	3/18/2021 6:31:16 PM	A76055
1,1-Dichloroethene	0.38	0.13	1.0	J	µg/L	1	3/18/2021 6:31:16 PM	A76055
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:45:00 AM
Lab ID: 2103612-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
2-Hexanone	ND	1.8	10		µg/L	1	3/18/2021 6:31:16 PM	A76055
Isopropylbenzene	1.7	0.18	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/18/2021 6:31:16 PM	A76055
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
n-Butylbenzene	0.97	0.25	3.0	J	µg/L	1	3/18/2021 6:31:16 PM	A76055
n-Propylbenzene	1.7	0.18	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
sec-Butylbenzene	0.90	0.61	1.0	J	µg/L	1	3/18/2021 6:31:16 PM	A76055
Styrene	ND	0.13	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/18/2021 6:31:16 PM	A76055
Xylenes, Total	2.1	0.55	1.5		µg/L	1	3/18/2021 6:31:16 PM	A76055
Surr: 1,2-Dichloroethane-d4	88.4	0	70-130		%Rec	1	3/18/2021 6:31:16 PM	A76055
Surr: 4-Bromofluorobenzene	81.7	0	70-130		%Rec	1	3/18/2021 6:31:16 PM	A76055
Surr: Dibromofluoromethane	86.6	0	70-130		%Rec	1	3/18/2021 6:31:16 PM	A76055
Surr: Toluene-d8	84.3	0	70-130		%Rec	1	3/18/2021 6:31:16 PM	A76055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	1.5	0.0080	0.050		mg/L	1	3/18/2021 6:31:16 PM	B76055
Surr: BFB	96.1	0	70-130		%Rec	1	3/18/2021 6:31:16 PM	B76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:45:00 AM
Lab ID: 2103612-006B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	5.8	0.075	0.085		mg/L	1	3/24/2021 12:17:57 AM	58760
Motor Oil Range Organics (MRO)	2.2	0.60	0.60		mg/L	1	3/24/2021 12:17:57 AM	58760
Surr: DNOP	94.9	0	45.1-141		%Rec	1	3/24/2021 12:17:57 AM	58760

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:45:00 AM
Lab ID: 2103612-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Azobenzene	ND	0.55	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Benzoic acid	ND	1.1	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/22/2021 6:24:33 PM	58736
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Carbazole	ND	0.56	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/22/2021 6:24:33 PM	58736
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/22/2021 6:24:33 PM	58736
Dibenzofuran	3.6	0.38	5.0	J	µg/L	1	3/22/2021 6:24:33 PM	58736
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Diethyl phthalate	ND	3.9	10		µg/L	1	3/22/2021 6:24:33 PM	58736
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/22/2021 6:24:33 PM	58736
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
2,4-Dimethylphenol	2.7	0.97	5.0	J	µg/L	1	3/22/2021 6:24:33 PM	58736
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Isophorone	ND	0.40	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:45:00 AM
Lab ID: 2103612-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Phenol	9.0	0.33	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Pyridine	ND	0.93	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/22/2021 6:24:33 PM	58736
Surr: 2-Fluorophenol	46.4	0	15-88.8		%Rec	1	3/22/2021 6:24:33 PM	58736
Surr: Phenol-d5	35.8	0	15-71.9		%Rec	1	3/22/2021 6:24:33 PM	58736
Surr: 2,4,6-Tribromophenol	79.7	0	15-97.4		%Rec	1	3/22/2021 6:24:33 PM	58736
Surr: Nitrobenzene-d5	55.3	0	15-117		%Rec	1	3/22/2021 6:24:33 PM	58736
Surr: 2-Fluorobiphenyl	52.6	0	15-100		%Rec	1	3/22/2021 6:24:33 PM	58736
Surr: 4-Terphenyl-d14	94.4	0	15-120		%Rec	1	3/22/2021 6:24:33 PM	58736
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	8.2	0.034	0.10		µg/L	1	3/20/2021	58709
1-Methylnaphthalene	48	0.24	1.0		µg/L	10	3/22/2021 6:08:00 PM	58709
2-Methylnaphthalene	9.4	0.034	0.10		µg/L	1	3/20/2021	58709
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/20/2021	58709
Acenaphthene	4.7	0.031	0.10		µg/L	1	3/20/2021	58709
Fluorene	5.0	0.031	0.10		µg/L	1	3/20/2021	58709
Phenanthrene	2.4	0.057	0.10		µg/L	1	3/20/2021	58709
Anthracene	0.46	0.034	0.10		µg/L	1	3/20/2021	58709
Fluoranthene	0.26	0.10	0.20		µg/L	1	3/20/2021	58709
Pyrene	0.24	0.16	0.20		µg/L	1	3/20/2021	58709
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/20/2021	58709
Chrysene	ND	0.024	0.10		µg/L	1	3/20/2021	58709
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/20/2021	58709
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/20/2021	58709
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/20/2021	58709
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/20/2021	58709
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/20/2021	58709
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/20/2021	58709
Surr: Nitrobenzene-d5	59.0	0	26.3-112		%Rec	1	3/20/2021	58709
Surr: 2-Fluorobiphenyl	52.0	0	21.1-110		%Rec	1	3/20/2021	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:45:00 AM
Lab ID: 2103612-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	76.0	0	17.6-167		%Rec	1	3/20/2021	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:45:00 AM
Lab ID: 2103612-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0062	0.0094		µg/L	1	3/16/2021 8:30:50 PM	58711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:45:00 AM
Lab ID: 2103612-006E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.51	0.043	0.10		mg/L	1	3/11/2021 9:02:52 PM	R75904
Chloride	320	5.0	10	*	mg/L	20	3/11/2021 9:15:44 PM	R75904
Nitrogen, Nitrite (As N)	ND	0.014	0.10		mg/L	1	3/11/2021 9:02:52 PM	R75904
Bromide	0.18	0.050	0.10		mg/L	1	3/11/2021 9:02:52 PM	R75904
Nitrogen, Nitrate (As N)	ND	0.020	0.10		mg/L	1	3/11/2021 9:02:52 PM	R75904
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	3/11/2021 9:02:52 PM	R75904
Sulfate	ND	0.25	0.50		mg/L	1	3/11/2021 9:02:52 PM	R75904

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:45:00 AM
Lab ID: 2103612-006F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/19/2021 8:45:24 AM	A76065
Barium	2.4	0.0056	0.010	*	mg/L	5	3/18/2021 10:57:11 AM	A76034
Beryllium	ND	0.00088	0.0020		mg/L	1	3/18/2021 10:55:37 AM	A76034
Boron	0.38	0.0067	0.040		mg/L	1	3/18/2021 10:55:37 AM	A76034
Cadmium	ND	0.0012	0.0020		mg/L	1	3/18/2021 10:55:37 AM	A76034
Calcium	110	0.57	5.0		mg/L	5	3/19/2021 8:46:57 AM	A76065
Chromium	ND	0.0020	0.0060		mg/L	1	3/18/2021 10:55:37 AM	A76034
Cobalt	ND	0.0024	0.0060		mg/L	1	3/18/2021 10:55:37 AM	A76034
Copper	ND	0.0035	0.0060		mg/L	1	3/18/2021 10:55:37 AM	A76034
Iron	0.24	0.010	0.020		mg/L	1	3/18/2021 10:55:37 AM	A76034
Magnesium	27	0.067	1.0		mg/L	1	3/18/2021 10:55:37 AM	A76034
Manganese	2.5	0.0029	0.010	*	mg/L	5	3/18/2021 10:57:11 AM	A76034
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/18/2021 10:55:37 AM	A76034
Nickel	0.0085	0.0033	0.010	J	mg/L	1	3/18/2021 10:55:37 AM	A76034
Potassium	0.41	0.16	1.0	J	mg/L	1	3/18/2021 10:55:37 AM	A76034
Silver	0.0015	0.0013	0.0050	J	mg/L	1	3/18/2021 10:55:37 AM	A76034
Sodium	310	0.69	5.0		mg/L	5	3/18/2021 10:57:11 AM	A76034
Zinc	0.015	0.0060	0.010		mg/L	1	3/22/2021 8:43:58 AM	A76106
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 4:44:24 PM	B75953
Arsenic	0.0011	0.00021	0.0010		mg/L	1	3/15/2021 4:44:24 PM	B75953
Lead	0.000090	0.000034	0.00050	J	mg/L	1	3/15/2021 4:44:24 PM	B75953
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 4:44:24 PM	B75953
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 4:44:24 PM	B75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 4:00:21 PM	58801

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-18
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 9:45:00 AM
Lab ID: 2103612-006G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.81	0.037	0.10	*	mg/L	5	3/16/2021 12:12:19 PM	58726
Barium	2.3	0.0082	0.015	*	mg/L	5	3/16/2021 12:12:19 PM	58726
Beryllium	ND	0.00088	0.0020		mg/L	1	3/16/2021 12:08:16 PM	58726
Boron	0.40	0.0074	0.040		mg/L	1	3/16/2021 12:08:16 PM	58726
Cadmium	ND	0.0015	0.0020		mg/L	1	3/16/2021 12:08:16 PM	58726
Chromium	ND	0.0021	0.0060		mg/L	1	3/16/2021 12:08:16 PM	58726
Cobalt	ND	0.0024	0.0060		mg/L	1	3/16/2021 12:08:16 PM	58726
Copper	ND	0.0047	0.0060		mg/L	1	3/16/2021 12:08:16 PM	58726
Iron	2.4	0.064	0.25	*	mg/L	5	3/16/2021 12:12:19 PM	58726
Manganese	2.4	0.0041	0.010	*	mg/L	5	3/16/2021 12:12:19 PM	58726
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/16/2021 12:08:16 PM	58726
Nickel	0.0036	0.0033	0.010	J	mg/L	1	3/16/2021 12:08:16 PM	58726
Silver	0.0016	0.0013	0.0050	J	mg/L	1	3/16/2021 12:08:16 PM	58726
Zinc	ND	0.0064	0.010		mg/L	1	3/16/2021 12:08:16 PM	58726
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/16/2021 4:59:42 PM	58726
Arsenic	0.0012	0.00026	0.0010		mg/L	1	3/16/2021 4:59:42 PM	58726
Lead	0.00056	0.000034	0.00050		mg/L	1	3/16/2021 4:59:42 PM	58726
Selenium	ND	0.00066	0.0010		mg/L	1	3/16/2021 4:59:42 PM	58726
Thallium	ND	0.00025	0.00025		mg/L	1	3/16/2021 4:59:42 PM	58726
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/17/2021 2:44:27 PM	58766

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Toluene	ND	0.20	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Naphthalene	ND	0.28	2.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Acetone	ND	2.3	10		µg/L	1	3/22/2021 4:40:31 PM	R76128
Bromobenzene	ND	0.28	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Bromoform	ND	0.31	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Bromomethane	ND	1.6	3.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
2-Butanone	ND	1.1	10		µg/L	1	3/22/2021 4:40:31 PM	R76128
Carbon disulfide	ND	0.44	10		µg/L	1	3/22/2021 4:40:31 PM	R76128
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Chloroethane	ND	0.38	2.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Chloroform	ND	0.13	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Chloromethane	ND	0.40	3.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Dibromomethane	ND	0.31	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
2-Hexanone	ND	1.8	10		µg/L	1	3/22/2021 4:40:31 PM	R76128
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/22/2021 4:40:31 PM	R76128
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Styrene	ND	0.13	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/22/2021 4:40:31 PM	R76128
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/22/2021 4:40:31 PM	R76128
Surr: 1,2-Dichloroethane-d4	88.5	0	70-130		%Rec	1	3/22/2021 4:40:31 PM	R76128
Surr: 4-Bromofluorobenzene	86.1	0	70-130		%Rec	1	3/22/2021 4:40:31 PM	R76128
Surr: Dibromofluoromethane	97.7	0	70-130		%Rec	1	3/22/2021 4:40:31 PM	R76128
Surr: Toluene-d8	82.8	0	70-130		%Rec	1	3/22/2021 4:40:31 PM	R76128
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	ND	0.0080	0.050		mg/L	1	3/18/2021 6:58:16 PM	B76055
Surr: BFB	93.6	0	70-130		%Rec	1	3/18/2021 6:58:16 PM	B76055

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-007B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **mb**	
Diesel Range Organics (DRO)	ND	0.075	0.085		mg/L	1	3/24/2021 12:41:27 AM	58760
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/24/2021 12:41:27 AM	58760
Surr: DNOP	98.6	0	45.1-141		%Rec	1	3/24/2021 12:41:27 AM	58760

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Azobenzene	ND	0.55	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Benzoic acid	ND	1.1	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	3/22/2021 7:05:50 PM	58736
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Carbazole	ND	0.56	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	3/22/2021 7:05:50 PM	58736
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/22/2021 7:05:50 PM	58736
Dibenzofuran	ND	0.38	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Diethyl phthalate	ND	3.9	10		µg/L	1	3/22/2021 7:05:50 PM	58736
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/22/2021 7:05:50 PM	58736
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Isophorone	ND	0.40	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
2-Methylphenol	ND	0.51	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Phenol	ND	0.33	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Pyridine	ND	0.93	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/22/2021 7:05:50 PM	58736
Surr: 2-Fluorophenol	64.1	0	15-88.8		%Rec	1	3/22/2021 7:05:50 PM	58736
Surr: Phenol-d5	50.2	0	15-71.9		%Rec	1	3/22/2021 7:05:50 PM	58736
Surr: 2,4,6-Tribromophenol	73.0	0	15-97.4		%Rec	1	3/22/2021 7:05:50 PM	58736
Surr: Nitrobenzene-d5	68.7	0	15-117		%Rec	1	3/22/2021 7:05:50 PM	58736
Surr: 2-Fluorobiphenyl	64.0	0	15-100		%Rec	1	3/22/2021 7:05:50 PM	58736
Surr: 4-Terphenyl-d14	81.7	0	15-120		%Rec	1	3/22/2021 7:05:50 PM	58736
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
Acenaphthene	ND	0.031	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
Fluorene	ND	0.031	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
Phenanthrene	ND	0.057	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
Anthracene	ND	0.034	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
Fluoranthene	ND	0.10	0.20		µg/L	1	3/20/2021 12:43:00 AM	58709
Pyrene	ND	0.16	0.20		µg/L	1	3/20/2021 12:43:00 AM	58709
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
Chrysene	ND	0.024	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/20/2021 12:43:00 AM	58709
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/20/2021 12:43:00 AM	58709
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/20/2021 12:43:00 AM	58709
Surr: Nitrobenzene-d5	72.0	0	26.3-112		%Rec	1	3/20/2021 12:43:00 AM	58709
Surr: 2-Fluorobiphenyl	56.0	0	21.1-110		%Rec	1	3/20/2021 12:43:00 AM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	102	0	17.6-167		%Rec	1	3/20/2021 12:43:00 AM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.043	0.10		mg/L	1	3/11/2021 9:28:37 PM	R75904
Chloride	ND	0.25	0.50		mg/L	1	3/11/2021 9:28:37 PM	R75904
Nitrogen, Nitrite (As N)	ND	0.014	0.10		mg/L	1	3/11/2021 9:28:37 PM	R75904
Bromide	ND	0.050	0.10		mg/L	1	3/11/2021 9:28:37 PM	R75904
Nitrogen, Nitrate (As N)	0.037	0.020	0.10	J	mg/L	1	3/11/2021 9:28:37 PM	R75904
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	3/11/2021 9:28:37 PM	R75904
Sulfate	ND	0.25	0.50		mg/L	1	3/11/2021 9:28:37 PM	R75904

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-007E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	3/19/2021 8:48:32 AM	A76065
Barium	ND	0.0011	0.0020		mg/L	1	3/18/2021 10:58:45 AM	A76034
Beryllium	ND	0.00088	0.0020		mg/L	1	3/18/2021 10:58:45 AM	A76034
Boron	ND	0.0067	0.040		mg/L	1	3/18/2021 10:58:45 AM	A76034
Cadmium	ND	0.0012	0.0020		mg/L	1	3/18/2021 10:58:45 AM	A76034
Calcium	ND	0.11	1.0		mg/L	1	3/18/2021 10:58:45 AM	A76034
Chromium	ND	0.0020	0.0060		mg/L	1	3/18/2021 10:58:45 AM	A76034
Cobalt	ND	0.0024	0.0060		mg/L	1	3/18/2021 10:58:45 AM	A76034
Copper	ND	0.0035	0.0060		mg/L	1	3/18/2021 10:58:45 AM	A76034
Iron	ND	0.010	0.020		mg/L	1	3/18/2021 10:58:45 AM	A76034
Magnesium	ND	0.067	1.0		mg/L	1	3/18/2021 10:58:45 AM	A76034
Manganese	ND	0.00058	0.0020		mg/L	1	3/18/2021 10:58:45 AM	A76034
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/18/2021 10:58:45 AM	A76034
Nickel	ND	0.0033	0.010		mg/L	1	3/18/2021 10:58:45 AM	A76034
Potassium	ND	0.16	1.0		mg/L	1	3/18/2021 10:58:45 AM	A76034
Silver	ND	0.0013	0.0050		mg/L	1	3/18/2021 10:58:45 AM	A76034
Sodium	ND	0.14	1.0		mg/L	1	3/18/2021 10:58:45 AM	A76034
Zinc	0.016	0.0060	0.010		mg/L	1	3/22/2021 8:48:49 AM	A76106
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 4:52:33 PM	B75953
Arsenic	ND	0.00021	0.0010		mg/L	1	3/15/2021 4:52:33 PM	B75953
Lead	ND	0.000034	0.00050		mg/L	1	3/15/2021 4:52:33 PM	B75953
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 4:52:33 PM	B75953
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 4:52:33 PM	B75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 4:02:46 PM	58801

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-007F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	ND	0.0074	0.020		mg/L	1	3/16/2021 12:18:46 PM	58726
Barium	ND	0.0016	0.0030		mg/L	1	3/16/2021 12:18:46 PM	58726
Beryllium	ND	0.00088	0.0020		mg/L	1	3/16/2021 12:18:46 PM	58726
Boron	ND	0.0074	0.040		mg/L	1	3/16/2021 12:18:46 PM	58726
Cadmium	ND	0.0015	0.0020		mg/L	1	3/16/2021 12:18:46 PM	58726
Chromium	ND	0.0021	0.0060		mg/L	1	3/16/2021 12:18:46 PM	58726
Cobalt	ND	0.0024	0.0060		mg/L	1	3/16/2021 12:18:46 PM	58726
Copper	ND	0.0047	0.0060		mg/L	1	3/16/2021 12:18:46 PM	58726
Iron	ND	0.013	0.050		mg/L	1	3/16/2021 12:18:46 PM	58726
Manganese	ND	0.00081	0.0020		mg/L	1	3/16/2021 12:18:46 PM	58726
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/16/2021 12:18:46 PM	58726
Nickel	ND	0.0033	0.010		mg/L	1	3/16/2021 12:18:46 PM	58726
Silver	ND	0.0013	0.0050		mg/L	1	3/16/2021 12:18:46 PM	58726
Zinc	ND	0.0064	0.010		mg/L	1	3/16/2021 12:18:46 PM	58726
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/16/2021 5:02:05 PM	58726
Arsenic	ND	0.00026	0.0010		mg/L	1	3/16/2021 5:02:05 PM	58726
Lead	ND	0.000034	0.00050		mg/L	1	3/16/2021 5:02:05 PM	58726
Selenium	ND	0.00066	0.0010		mg/L	1	3/16/2021 5:02:05 PM	58726
Thallium	ND	0.00025	0.00025		mg/L	1	3/16/2021 5:02:05 PM	58726
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/17/2021 2:46:50 PM	58766

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021
Lab ID: 2103612-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	3300	23	100		µg/L	100	3/19/2021 12:19:46 PM	A76093
Toluene	99	2.0	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Ethylbenzene	490	2.1	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Methyl tert-butyl ether (MTBE)	110	3.9	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,2,4-Trimethylbenzene	250	1.2	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,3,5-Trimethylbenzene	13	1.8	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,2-Dichloroethane (EDC)	ND	2.2	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Naphthalene	55	2.8	20		µg/L	10	3/19/2021 12:47:08 PM	A76093
1-Methylnaphthalene	ND	8.4	40		µg/L	10	3/19/2021 12:47:08 PM	A76093
2-Methylnaphthalene	8.1	6.9	40	J	µg/L	10	3/19/2021 12:47:08 PM	A76093
Acetone	ND	23	100		µg/L	10	3/19/2021 12:47:08 PM	A76093
Bromobenzene	ND	2.8	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Bromodichloromethane	ND	2.0	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Bromoform	ND	3.1	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Bromomethane	ND	16	30		µg/L	10	3/19/2021 12:47:08 PM	A76093
2-Butanone	ND	11	100		µg/L	10	3/19/2021 12:47:08 PM	A76093
Carbon disulfide	ND	4.4	100		µg/L	10	3/19/2021 12:47:08 PM	A76093
Carbon Tetrachloride	ND	1.8	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Chlorobenzene	ND	1.4	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Chloroethane	ND	3.8	20		µg/L	10	3/19/2021 12:47:08 PM	A76093
Chloroform	ND	1.3	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Chloromethane	ND	4.0	30		µg/L	10	3/19/2021 12:47:08 PM	A76093
2-Chlorotoluene	ND	1.3	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
4-Chlorotoluene	ND	5.1	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
cis-1,2-DCE	ND	3.9	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	3/19/2021 12:47:08 PM	A76093
Dibromochloromethane	ND	2.8	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Dibromomethane	ND	3.1	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Dichlorodifluoromethane	ND	4.4	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,1-Dichloroethane	ND	2.7	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,1-Dichloroethene	ND	1.3	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,2-Dichloropropane	ND	1.3	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,3-Dichloropropane	ND	1.8	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
2,2-Dichloropropane	ND	2.6	20		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,1-Dichloropropene	ND	1.8	10		µg/L	10	3/19/2021 12:47:08 PM	A76093

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021
Lab ID: 2103612-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	3.3	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
2-Hexanone	ND	18	100		µg/L	10	3/19/2021 12:47:08 PM	A76093
Isopropylbenzene	18	1.8	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
4-Isopropyltoluene	ND	2.0	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
4-Methyl-2-pentanone	ND	11	100		µg/L	10	3/19/2021 12:47:08 PM	A76093
Methylene Chloride	ND	4.0	30		µg/L	10	3/19/2021 12:47:08 PM	A76093
n-Butylbenzene	3.4	2.5	30	J	µg/L	10	3/19/2021 12:47:08 PM	A76093
n-Propylbenzene	52	1.8	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
sec-Butylbenzene	ND	6.1	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Styrene	ND	1.3	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
tert-Butylbenzene	ND	2.4	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	3/19/2021 12:47:08 PM	A76093
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
trans-1,2-DCE	ND	4.9	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,2,3-Trichlorobenzene	ND	1.3	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,1,2-Trichloroethane	ND	1.9	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Trichlorofluoromethane	ND	0.92	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	3/19/2021 12:47:08 PM	A76093
Vinyl chloride	ND	2.0	10		µg/L	10	3/19/2021 12:47:08 PM	A76093
Xylenes, Total	910	5.5	15		µg/L	10	3/19/2021 12:47:08 PM	A76093
Surr: 1,2-Dichloroethane-d4	88.3	0	70-130		%Rec	10	3/19/2021 12:47:08 PM	A76093
Surr: 4-Bromofluorobenzene	88.0	0	70-130		%Rec	10	3/19/2021 12:47:08 PM	A76093
Surr: Dibromofluoromethane	89.8	0	70-130		%Rec	10	3/19/2021 12:47:08 PM	A76093
Surr: Toluene-d8	79.5	0	70-130		%Rec	10	3/19/2021 12:47:08 PM	A76093
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	14	0.080	0.50		mg/L	10	3/19/2021 12:48:46 PM	B76093
Surr: BFB	93.5	0	70-130		%Rec	10	3/19/2021 12:48:46 PM	B76093

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021
Lab ID: 2103612-008B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: **AMF**	
Diesel Range Organics (DRO)	0.88	0.075	0.085		mg/L	1	3/24/2021 1:04:55 AM	58760
Motor Oil Range Organics (MRO)	ND	0.60	0.60		mg/L	1	3/24/2021 1:04:55 AM	58760
Surr: DNOP	100	0	45.1-141		%Rec	1	3/24/2021 1:04:55 AM	58760

NOTES:
See the Case Narrative Regarding the DRO results listed above.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021
Lab ID: 2103612-008C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Azobenzene	ND	0.55	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Benzoic acid	ND	1.1	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Benzyl alcohol	ND	0.68	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Bis(2-ethylhexyl)phthalate	6.6	4.5	10	J	µg/L	1	3/22/2021 7:47:09 PM	58736
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Carbazole	3.8	0.56	5.0	J	µg/L	1	3/22/2021 7:47:09 PM	58736
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
4-Chloroaniline	ND	0.53	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
2-Chlorophenol	ND	0.62	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Di-n-butyl phthalate	6.5	6.5	10	J	µg/L	1	3/22/2021 7:47:09 PM	58736
Di-n-octyl phthalate	ND	3.1	10		µg/L	1	3/22/2021 7:47:09 PM	58736
Dibenzofuran	2.6	0.38	5.0	J	µg/L	1	3/22/2021 7:47:09 PM	58736
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Diethyl phthalate	ND	3.9	10		µg/L	1	3/22/2021 7:47:09 PM	58736
Dimethyl phthalate	ND	2.0	10		µg/L	1	3/22/2021 7:47:09 PM	58736
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
2,4-Dimethylphenol	5.2	0.97	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Hexachloroethane	ND	0.45	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Isophorone	ND	0.40	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
2-Methylphenol	0.69	0.51	5.0	J	µg/L	1	3/22/2021 7:47:09 PM	58736
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021
Lab ID: 2103612-008C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
2-Nitroaniline	ND	0.31	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
3-Nitroaniline	ND	1.6	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
4-Nitroaniline	ND	0.47	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Nitrobenzene	ND	0.51	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
2-Nitrophenol	ND	0.47	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
4-Nitrophenol	ND	0.28	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Pentachlorophenol	ND	0.59	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Phenol	21	0.33	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Pyridine	ND	0.93	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	3/22/2021 7:47:09 PM	58736
Surr: 2-Fluorophenol	0	0	15-88.8	S	%Rec	1	3/22/2021 7:47:09 PM	58736
Surr: Phenol-d5	28.0	0	15-71.9		%Rec	1	3/22/2021 7:47:09 PM	58736
Surr: 2,4,6-Tribromophenol	42.2	0	15-97.4		%Rec	1	3/22/2021 7:47:09 PM	58736
Surr: Nitrobenzene-d5	43.5	0	15-117		%Rec	1	3/22/2021 7:47:09 PM	58736
Surr: 2-Fluorobiphenyl	42.9	0	15-100		%Rec	1	3/22/2021 7:47:09 PM	58736
Surr: 4-Terphenyl-d14	58.6	0	15-120		%Rec	1	3/22/2021 7:47:09 PM	58736
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	46	0.34	1.0		µg/L	10	3/22/2021 6:52:00 PM	58709
1-Methylnaphthalene	6.0	0.024	0.10		µg/L	1	3/20/2021 1:26:00 AM	58709
2-Methylnaphthalene	6.9	0.034	0.10		µg/L	1	3/20/2021 1:26:00 AM	58709
Acenaphthylene	ND	0.043	0.10		µg/L	1	3/20/2021 1:26:00 AM	58709
Acenaphthene	1.9	0.031	0.10		µg/L	1	3/20/2021 1:26:00 AM	58709
Fluorene	0.30	0.031	0.10		µg/L	1	3/20/2021 1:26:00 AM	58709
Phenanthrene	ND	0.057	0.10		µg/L	1	3/20/2021 1:26:00 AM	58709
Anthracene	0.38	0.034	0.10		µg/L	1	3/20/2021 1:26:00 AM	58709
Fluoranthene	0.20	0.10	0.20		µg/L	1	3/20/2021 1:26:00 AM	58709
Pyrene	0.16	0.16	0.20	J	µg/L	1	3/20/2021 1:26:00 AM	58709
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	3/20/2021 1:26:00 AM	58709
Chrysene	ND	0.024	0.10		µg/L	1	3/20/2021 1:26:00 AM	58709
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	3/20/2021 1:26:00 AM	58709
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	3/20/2021 1:26:00 AM	58709
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	3/20/2021 1:26:00 AM	58709
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	3/20/2021 1:26:00 AM	58709
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	3/20/2021 1:26:00 AM	58709
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	3/20/2021 1:26:00 AM	58709
Surr: Nitrobenzene-d5	3.50	0	26.3-112	S	%Rec	1	3/20/2021 1:26:00 AM	58709
Surr: 2-Fluorobiphenyl	58.0	0	21.1-110		%Rec	1	3/20/2021 1:26:00 AM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021
Lab ID: 2103612-008C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	92.0	0	17.6-167		%Rec	1	3/20/2021 1:26:00 AM	58709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021
Lab ID: 2103612-008D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0063	0.0095		µg/L	1	3/16/2021 8:45:48 PM	58711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021
Lab ID: 2103612-008E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.59	0.22	0.50		mg/L	5	3/11/2021 9:54:23 PM	R75904
Chloride	360	5.0	10	*	mg/L	20	3/11/2021 10:07:15 PM	R75904
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/11/2021 9:54:23 PM	R75904
Bromide	0.79	0.25	0.50		mg/L	5	3/11/2021 9:54:23 PM	R75904
Nitrogen, Nitrate (As N)	0.12	0.10	0.50	J	mg/L	5	3/11/2021 9:54:23 PM	R75904
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/11/2021 9:54:23 PM	R75904
Sulfate	ND	1.2	2.5		mg/L	5	3/11/2021 9:54:23 PM	R75904

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Qualifiers:

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Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021
Lab ID: 2103612-008F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.10	0.0056	0.020		mg/L	1	3/19/2021 8:50:06 AM	A76065
Barium	2.6	0.0056	0.010	*	mg/L	5	3/18/2021 11:06:29 AM	A76034
Beryllium	ND	0.00088	0.0020		mg/L	1	3/18/2021 11:05:07 AM	A76034
Boron	0.27	0.0067	0.040		mg/L	1	3/18/2021 11:05:07 AM	A76034
Cadmium	ND	0.0012	0.0020		mg/L	1	3/18/2021 11:05:07 AM	A76034
Calcium	190	1.1	10		mg/L	10	3/19/2021 8:51:27 AM	A76065
Chromium	ND	0.0020	0.0060		mg/L	1	3/18/2021 11:05:07 AM	A76034
Cobalt	0.0030	0.0024	0.0060	J	mg/L	1	3/18/2021 11:05:07 AM	A76034
Copper	ND	0.0035	0.0060		mg/L	1	3/18/2021 11:05:07 AM	A76034
Iron	4.9	0.10	0.20	*	mg/L	10	3/22/2021 8:51:45 AM	A76106
Magnesium	53	0.067	1.0		mg/L	1	3/18/2021 11:05:07 AM	A76034
Manganese	3.2	0.0029	0.010	*	mg/L	5	3/18/2021 11:06:29 AM	A76034
Molybdenum	ND	0.0056	0.0080		mg/L	1	3/18/2021 11:05:07 AM	A76034
Nickel	0.0041	0.0033	0.010	J	mg/L	1	3/18/2021 11:05:07 AM	A76034
Potassium	0.45	0.16	1.0	J	mg/L	1	3/18/2021 11:05:07 AM	A76034
Silver	0.0019	0.0013	0.0050	J	mg/L	1	3/18/2021 11:05:07 AM	A76034
Sodium	230	0.69	5.0		mg/L	5	3/18/2021 11:06:29 AM	A76034
Zinc	0.014	0.0060	0.010		mg/L	1	3/22/2021 8:50:24 AM	A76106
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/15/2021 4:55:15 PM	B75953
Arsenic	0.00030	0.00021	0.0010	J	mg/L	1	3/15/2021 4:55:15 PM	B75953
Lead	0.00027	0.000034	0.00050	J	mg/L	1	3/15/2021 4:55:15 PM	B75953
Selenium	ND	0.00066	0.0010		mg/L	1	3/15/2021 4:55:15 PM	B75953
Thallium	ND	0.000035	0.00050		mg/L	1	3/15/2021 4:55:15 PM	B75953
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/18/2021 4:05:11 PM	58801

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 3-11-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021
Lab ID: 2103612-008G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	16	0.15	0.40	*	mg/L	20	3/16/2021 1:03:31 PM	58726
Barium	4.4	0.0082	0.015	*	mg/L	5	3/16/2021 12:29:35 PM	58726
Beryllium	ND	0.00088	0.0020		mg/L	1	3/16/2021 12:28:14 PM	58726
Boron	0.26	0.0074	0.040		mg/L	1	3/16/2021 12:28:14 PM	58726
Cadmium	ND	0.0015	0.0020		mg/L	1	3/16/2021 12:28:14 PM	58726
Chromium	0.0082	0.0021	0.0060		mg/L	1	3/16/2021 12:28:14 PM	58726
Cobalt	0.0078	0.0024	0.0060		mg/L	1	3/16/2021 12:28:14 PM	58726
Copper	0.0075	0.0047	0.0060		mg/L	1	3/16/2021 12:28:14 PM	58726
Iron	11	0.26	1.0	*	mg/L	20	3/16/2021 1:03:31 PM	58726
Manganese	3.9	0.0041	0.010	*	mg/L	5	3/16/2021 12:29:35 PM	58726
Molybdenum	ND	0.0065	0.0080		mg/L	1	3/16/2021 12:28:14 PM	58726
Nickel	0.012	0.0033	0.010		mg/L	1	3/16/2021 12:28:14 PM	58726
Silver	0.0031	0.0013	0.0050	J	mg/L	1	3/16/2021 12:28:14 PM	58726
Zinc	0.019	0.0064	0.010		mg/L	1	3/16/2021 12:28:14 PM	58726
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00070	0.0010		mg/L	1	3/16/2021 5:04:28 PM	58726
Arsenic	0.0023	0.00026	0.0010		mg/L	1	3/16/2021 5:04:28 PM	58726
Lead	0.0097	0.000034	0.00050		mg/L	1	3/16/2021 5:04:28 PM	58726
Selenium	0.0014	0.00066	0.0010		mg/L	1	3/16/2021 5:04:28 PM	58726
Thallium	ND	0.00025	0.00025		mg/L	1	3/16/2021 5:04:28 PM	58726
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/17/2021 2:54:00 PM	58766

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Field Blank 3-10-2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 1:15:00 PM
Lab ID: 2103612-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Toluene	ND	0.20	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Naphthalene	ND	0.28	2.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Acetone	ND	2.3	10		µg/L	1	3/18/2021 11:56:01 PM	A76055
Bromobenzene	ND	0.28	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Bromoform	ND	0.31	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Bromomethane	ND	1.6	3.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
2-Butanone	ND	1.1	10		µg/L	1	3/18/2021 11:56:01 PM	A76055
Carbon disulfide	ND	0.44	10		µg/L	1	3/18/2021 11:56:01 PM	A76055
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Chloroethane	ND	0.38	2.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Chloroform	ND	0.13	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Chloromethane	ND	0.40	3.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Dibromomethane	ND	0.31	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Field Blank 3-10-2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/10/2021 1:15:00 PM
Lab ID: 2103612-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
2-Hexanone	ND	1.8	10		µg/L	1	3/18/2021 11:56:01 PM	A76055
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/18/2021 11:56:01 PM	A76055
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Styrene	ND	0.13	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/18/2021 11:56:01 PM	A76055
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/18/2021 11:56:01 PM	A76055
Surr: 1,2-Dichloroethane-d4	95.3	0	70-130		%Rec	1	3/18/2021 11:56:01 PM	A76055
Surr: 4-Bromofluorobenzene	88.1	0	70-130		%Rec	1	3/18/2021 11:56:01 PM	A76055
Surr: Dibromofluoromethane	95.2	0	70-130		%Rec	1	3/18/2021 11:56:01 PM	A76055
Surr: Toluene-d8	84.2	0	70-130		%Rec	1	3/18/2021 11:56:01 PM	A76055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.018	0.0080	0.050	J	mg/L	1	3/18/2021 11:56:01 PM	B76055
Surr: BFB	94.1	0	70-130		%Rec	1	3/18/2021 11:56:01 PM	B76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Field Blank 3-11-2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-010A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Toluene	ND	0.20	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Ethylbenzene	ND	0.21	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Naphthalene	ND	0.28	2.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Acetone	ND	2.3	10		µg/L	1	3/19/2021 12:23:10 AM	A76055
Bromobenzene	ND	0.28	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Bromodichloromethane	ND	0.20	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Bromoform	ND	0.31	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Bromomethane	ND	1.6	3.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
2-Butanone	ND	1.1	10		µg/L	1	3/19/2021 12:23:10 AM	A76055
Carbon disulfide	ND	0.44	10		µg/L	1	3/19/2021 12:23:10 AM	A76055
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Chlorobenzene	ND	0.14	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Chloroethane	ND	0.38	2.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Chloroform	ND	0.13	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Chloromethane	ND	0.40	3.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Dibromochloromethane	ND	0.28	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Dibromomethane	ND	0.31	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Field Blank 3-11-2021
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:45:00 AM
Lab ID: 2103612-010A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
2-Hexanone	ND	1.8	10		µg/L	1	3/19/2021 12:23:10 AM	A76055
Isopropylbenzene	ND	0.18	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	3/19/2021 12:23:10 AM	A76055
Methylene Chloride	ND	0.40	3.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
n-Butylbenzene	ND	0.25	3.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
n-Propylbenzene	ND	0.18	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Styrene	ND	0.13	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Vinyl chloride	ND	0.20	1.0		µg/L	1	3/19/2021 12:23:10 AM	A76055
Xylenes, Total	ND	0.55	1.5		µg/L	1	3/19/2021 12:23:10 AM	A76055
Surr: 1,2-Dichloroethane-d4	87.7	0	70-130		%Rec	1	3/19/2021 12:23:10 AM	A76055
Surr: 4-Bromofluorobenzene	86.4	0	70-130		%Rec	1	3/19/2021 12:23:10 AM	A76055
Surr: Dibromofluoromethane	89.0	0	70-130		%Rec	1	3/19/2021 12:23:10 AM	A76055
Surr: Toluene-d8	85.6	0	70-130		%Rec	1	3/19/2021 12:23:10 AM	A76055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	0.017	0.0080	0.050	J	mg/L	1	3/19/2021 12:23:10 AM	B76055
Surr: BFB	96.7	0	70-130		%Rec	1	3/19/2021 12:23:10 AM	B76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:15:00 AM
Lab ID: 2103612-011A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	4500	23	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Toluene	ND	20	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Ethylbenzene	550	21	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Methyl tert-butyl ether (MTBE)	160	39	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,2,4-Trimethylbenzene	150	12	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,3,5-Trimethylbenzene	ND	18	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,2-Dichloroethane (EDC)	ND	22	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,2-Dibromoethane (EDB)	ND	30	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Naphthalene	57	28	200	J	µg/L	100	3/19/2021 12:50:17 AM	A76055
1-Methylnaphthalene	ND	84	400		µg/L	100	3/19/2021 12:50:17 AM	A76055
2-Methylnaphthalene	ND	69	400		µg/L	100	3/19/2021 12:50:17 AM	A76055
Acetone	ND	230	1000		µg/L	100	3/19/2021 12:50:17 AM	A76055
Bromobenzene	ND	28	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Bromodichloromethane	ND	20	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Bromoform	ND	31	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Bromomethane	ND	160	300		µg/L	100	3/19/2021 12:50:17 AM	A76055
2-Butanone	ND	110	1000		µg/L	100	3/19/2021 12:50:17 AM	A76055
Carbon disulfide	ND	44	1000		µg/L	100	3/19/2021 12:50:17 AM	A76055
Carbon Tetrachloride	ND	18	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Chlorobenzene	ND	14	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Chloroethane	ND	38	200		µg/L	100	3/19/2021 12:50:17 AM	A76055
Chloroform	ND	13	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Chloromethane	ND	40	300		µg/L	100	3/19/2021 12:50:17 AM	A76055
2-Chlorotoluene	ND	13	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
4-Chlorotoluene	ND	51	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
cis-1,2-DCE	ND	39	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
cis-1,3-Dichloropropene	ND	36	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,2-Dibromo-3-chloropropane	ND	59	200		µg/L	100	3/19/2021 12:50:17 AM	A76055
Dibromochloromethane	ND	28	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Dibromomethane	ND	31	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,2-Dichlorobenzene	ND	15	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,3-Dichlorobenzene	ND	16	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,4-Dichlorobenzene	ND	21	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Dichlorodifluoromethane	ND	44	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,1-Dichloroethane	68	27	100	J	µg/L	100	3/19/2021 12:50:17 AM	A76055
1,1-Dichloroethene	ND	13	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,2-Dichloropropane	ND	13	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,3-Dichloropropane	ND	18	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
2,2-Dichloropropane	ND	26	200		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,1-Dichloropropene	ND	18	100		µg/L	100	3/19/2021 12:50:17 AM	A76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-16
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 11:15:00 AM
Lab ID: 2103612-011A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	33	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
2-Hexanone	ND	180	1000		µg/L	100	3/19/2021 12:50:17 AM	A76055
Isopropylbenzene	ND	18	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
4-Isopropyltoluene	ND	20	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
4-Methyl-2-pentanone	ND	110	1000		µg/L	100	3/19/2021 12:50:17 AM	A76055
Methylene Chloride	ND	40	300		µg/L	100	3/19/2021 12:50:17 AM	A76055
n-Butylbenzene	ND	25	300		µg/L	100	3/19/2021 12:50:17 AM	A76055
n-Propylbenzene	30	18	100	J	µg/L	100	3/19/2021 12:50:17 AM	A76055
sec-Butylbenzene	ND	61	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Styrene	ND	13	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
tert-Butylbenzene	ND	24	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,1,1,2-Tetrachloroethane	ND	27	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,1,2,2-Tetrachloroethane	ND	27	200		µg/L	100	3/19/2021 12:50:17 AM	A76055
Tetrachloroethene (PCE)	ND	36	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
trans-1,2-DCE	ND	49	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
trans-1,3-Dichloropropene	ND	34	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,2,3-Trichlorobenzene	ND	13	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,2,4-Trichlorobenzene	ND	24	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,1,1-Trichloroethane	ND	30	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,1,2-Trichloroethane	ND	19	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Trichloroethene (TCE)	ND	20	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
Trichlorofluoromethane	ND	9.2	100		µg/L	100	3/19/2021 12:50:17 AM	A76055
1,2,3-Trichloropropane	ND	44	200		µg/L	100	3/19/2021 12:50:17 AM	A76055
Vinyl chloride	40	20	100	J	µg/L	100	3/19/2021 12:50:17 AM	A76055
Xylenes, Total	160	55	150		µg/L	100	3/19/2021 12:50:17 AM	A76055
Surr: 1,2-Dichloroethane-d4	92.3	0	70-130		%Rec	100	3/19/2021 12:50:17 AM	A76055
Surr: 4-Bromofluorobenzene	85.9	0	70-130		%Rec	100	3/19/2021 12:50:17 AM	A76055
Surr: Dibromofluoromethane	96.3	0	70-130		%Rec	100	3/19/2021 12:50:17 AM	A76055
Surr: Toluene-d8	84.6	0	70-130		%Rec	100	3/19/2021 12:50:17 AM	A76055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	17	0.80	5.0		mg/L	100	3/19/2021 12:50:17 AM	B76055
Surr: BFB	93.4	0	70-130		%Rec	100	3/19/2021 12:50:17 AM	B76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:50:00 AM
Lab ID: 2103612-012A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	18	0.45	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Toluene	0.41	0.40	2.0	J	µg/L	2	3/19/2021 1:14:21 PM	A76093
Ethylbenzene	6.3	0.43	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Methyl tert-butyl ether (MTBE)	30	0.79	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,2,4-Trimethylbenzene	16	0.24	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,3,5-Trimethylbenzene	16	0.36	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,2-Dichloroethane (EDC)	ND	0.44	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,2-Dibromoethane (EDB)	ND	0.61	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Naphthalene	7.2	0.56	4.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1-Methylnaphthalene	17	1.7	8.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
2-Methylnaphthalene	12	1.4	8.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Acetone	37	4.7	20		µg/L	2	3/19/2021 1:14:21 PM	A76093
Bromobenzene	ND	0.57	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Bromodichloromethane	ND	0.41	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Bromoform	ND	0.63	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Bromomethane	ND	3.1	6.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
2-Butanone	ND	2.2	20		µg/L	2	3/19/2021 1:14:21 PM	A76093
Carbon disulfide	ND	0.89	20		µg/L	2	3/19/2021 1:14:21 PM	A76093
Carbon Tetrachloride	ND	0.35	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Chlorobenzene	ND	0.27	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Chloroethane	ND	0.75	4.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Chloroform	ND	0.27	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Chloromethane	ND	0.80	6.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
2-Chlorotoluene	ND	0.26	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
4-Chlorotoluene	ND	1.0	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
cis-1,2-DCE	ND	0.78	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
cis-1,3-Dichloropropene	ND	0.72	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,2-Dibromo-3-chloropropane	ND	1.2	4.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Dibromochloromethane	ND	0.57	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Dibromomethane	ND	0.62	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,2-Dichlorobenzene	ND	0.31	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,3-Dichlorobenzene	ND	0.32	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,4-Dichlorobenzene	ND	0.42	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Dichlorodifluoromethane	ND	0.88	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,1-Dichloroethane	ND	0.55	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,1-Dichloroethene	ND	0.26	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,2-Dichloropropane	ND	0.27	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,3-Dichloropropane	ND	0.36	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
2,2-Dichloropropane	ND	0.52	4.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,1-Dichloropropene	ND	0.36	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:50:00 AM
Lab ID: 2103612-012A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.66	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
2-Hexanone	ND	3.6	20		µg/L	2	3/19/2021 1:14:21 PM	A76093
Isopropylbenzene	0.44	0.37	2.0	J	µg/L	2	3/19/2021 1:14:21 PM	A76093
4-Isopropyltoluene	ND	0.40	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
4-Methyl-2-pentanone	13	2.3	20	J	µg/L	2	3/19/2021 1:14:21 PM	A76093
Methylene Chloride	ND	0.80	6.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
n-Butylbenzene	ND	0.51	6.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
n-Propylbenzene	0.90	0.36	2.0	J	µg/L	2	3/19/2021 1:14:21 PM	A76093
sec-Butylbenzene	ND	1.2	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Styrene	ND	0.26	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
tert-Butylbenzene	ND	0.49	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,1,1,2-Tetrachloroethane	ND	0.53	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,1,2,2-Tetrachloroethane	ND	0.55	4.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Tetrachloroethene (PCE)	ND	0.71	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
trans-1,2-DCE	ND	0.97	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
trans-1,3-Dichloropropene	ND	0.68	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,2,3-Trichlorobenzene	ND	0.27	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,2,4-Trichlorobenzene	ND	0.48	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,1,1-Trichloroethane	ND	0.60	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,1,2-Trichloroethane	ND	0.38	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Trichloroethene (TCE)	ND	0.41	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Trichlorofluoromethane	ND	0.18	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
1,2,3-Trichloropropane	ND	0.88	4.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Vinyl chloride	ND	0.39	2.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Xylenes, Total	4.3	1.1	3.0		µg/L	2	3/19/2021 1:14:21 PM	A76093
Surr: 1,2-Dichloroethane-d4	87.2	0	70-130		%Rec	2	3/19/2021 1:14:21 PM	A76093
Surr: 4-Bromofluorobenzene	111	0	70-130		%Rec	2	3/19/2021 1:14:21 PM	A76093
Surr: Dibromofluoromethane	86.9	0	70-130		%Rec	2	3/19/2021 1:14:21 PM	A76093
Surr: Toluene-d8	88.4	0	70-130		%Rec	2	3/19/2021 1:14:21 PM	A76093
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **BRM**	
Gasoline Range Organics (GRO)	1.8	0.016	0.10		mg/L	2	3/19/2021 1:14:21 PM	B76093
Surr: BFB	132	0	70-130	S	%Rec	2	3/19/2021 1:14:21 PM	B76093

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:50:00 AM
Lab ID: 2103612-012B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.22	0.50		mg/L	5	3/11/2021 10:45:53 PM	R75904
Chloride	150	5.0	10		mg/L	20	3/11/2021 10:58:45 PM	R75904
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	3/11/2021 10:45:53 PM	R75904
Bromide	ND	0.25	0.50		mg/L	5	3/11/2021 10:45:53 PM	R75904
Nitrogen, Nitrate (As N)	0.12	0.10	0.50	J	mg/L	5	3/11/2021 10:45:53 PM	R75904
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	3/11/2021 10:45:53 PM	R75904
Sulfate	110	1.2	2.5		mg/L	5	3/11/2021 10:45:53 PM	R75904

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-21
Project: 2021 GW Sampling 1st Quarter
Collection Date: 3/11/2021 10:50:00 AM
Lab ID: 2103612-012D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	2.9	0.037	0.10	*	mg/L	5	3/16/2021 12:32:18 PM	58726
Barium	0.67	0.0016	0.0030		mg/L	1	3/16/2021 12:30:57 PM	58726
Beryllium	ND	0.00088	0.0020		mg/L	1	3/16/2021 12:30:57 PM	58726
Boron	ND	0.0074	0.040		mg/L	1	3/16/2021 12:30:57 PM	58726
Cadmium	ND	0.0015	0.0020		mg/L	1	3/16/2021 12:30:57 PM	58726
Calcium	160	0.57	5.0		mg/L	5	3/16/2021 12:32:18 PM	58726
Chromium	0.017	0.0021	0.0060		mg/L	1	3/16/2021 12:30:57 PM	58726
Cobalt	0.044	0.0024	0.0060		mg/L	1	3/16/2021 12:30:57 PM	58726
Copper	0.18	0.0047	0.0060		mg/L	1	3/16/2021 12:30:57 PM	58726
Iron	170	2.6	10	*	mg/L	200	3/16/2021 1:05:09 PM	58726
Magnesium	12	0.067	1.0		mg/L	1	3/16/2021 12:30:57 PM	58726
Manganese	2.1	0.0041	0.010	*	mg/L	5	3/16/2021 12:32:18 PM	58726
Molybdenum	0.12	0.0065	0.0080		mg/L	1	3/16/2021 12:30:57 PM	58726
Nickel	0.031	0.0033	0.010		mg/L	1	3/16/2021 12:30:57 PM	58726
Potassium	11	0.16	1.0		mg/L	1	3/16/2021 12:30:57 PM	58726
Silver	ND	0.0013	0.0050		mg/L	1	3/16/2021 12:30:57 PM	58726
Sodium	130	0.93	5.0		mg/L	5	3/16/2021 12:32:18 PM	58726
Zinc	1.5	0.032	0.050		mg/L	5	3/16/2021 12:32:18 PM	58726
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	0.0012	0.00070	0.0010		mg/L	1	3/16/2021 5:18:50 PM	58726
Arsenic	0.057	0.0013	0.0050	*	mg/L	5	3/16/2021 5:26:01 PM	58726
Lead	0.0083	0.000034	0.00050		mg/L	1	3/16/2021 5:18:50 PM	58726
Selenium	0.0029	0.00066	0.0010		mg/L	1	3/16/2021 5:18:50 PM	58726
Thallium	ND	0.00025	0.00025		mg/L	1	3/16/2021 5:18:50 PM	58726
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	3/17/2021 2:56:23 PM	58766

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 1st Quarter
Collection Date:
Lab ID: 2103612-013A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Benzene	ND	0.23	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Toluene	ND	0.20	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Ethylbenzene	ND	0.21	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,2,4-Trimethylbenzene	ND	0.12	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,3,5-Trimethylbenzene	ND	0.18	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,2-Dichloroethane (EDC)	ND	0.22	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,2-Dibromoethane (EDB)	ND	0.30	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Naphthalene	ND	0.28	2.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1-Methylnaphthalene	ND	0.84	4.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
2-Methylnaphthalene	ND	0.69	4.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Acetone	ND	2.3	10	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Bromobenzene	ND	0.28	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Bromodichloromethane	ND	0.20	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Bromoform	ND	0.31	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Bromomethane	ND	1.6	3.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
2-Butanone	ND	1.1	10	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Carbon disulfide	ND	0.44	10	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Carbon Tetrachloride	ND	0.18	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Chlorobenzene	ND	0.14	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Chloroethane	ND	0.38	2.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Chloroform	ND	0.13	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Chloromethane	ND	0.40	3.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
2-Chlorotoluene	ND	0.13	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
4-Chlorotoluene	ND	0.51	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
cis-1,2-DCE	ND	0.39	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
cis-1,3-Dichloropropene	ND	0.36	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,2-Dibromo-3-chloropropane	ND	0.59	2.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Dibromochloromethane	ND	0.28	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Dibromomethane	ND	0.31	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,2-Dichlorobenzene	ND	0.15	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,3-Dichlorobenzene	ND	0.16	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,4-Dichlorobenzene	ND	0.21	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Dichlorodifluoromethane	ND	0.44	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,1-Dichloroethane	ND	0.27	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,1-Dichloroethene	ND	0.13	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,2-Dichloropropane	ND	0.13	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,3-Dichloropropane	ND	0.18	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
2,2-Dichloropropane	ND	0.26	2.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,1-Dichloropropene	ND	0.18	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 1st Quarter
Collection Date:
Lab ID: 2103612-013A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **BRM**	
Hexachlorobutadiene	ND	0.33	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
2-Hexanone	ND	1.8	10	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Isopropylbenzene	ND	0.18	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
4-Isopropyltoluene	ND	0.20	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
4-Methyl-2-pentanone	ND	1.1	10	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Methylene Chloride	ND	0.40	3.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
n-Butylbenzene	ND	0.25	3.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
n-Propylbenzene	ND	0.18	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
sec-Butylbenzene	ND	0.61	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Styrene	ND	0.13	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
tert-Butylbenzene	ND	0.24	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,1,1,2-Tetrachloroethane	ND	0.27	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,1,2,2-Tetrachloroethane	ND	0.27	2.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Tetrachloroethene (PCE)	ND	0.36	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
trans-1,2-DCE	ND	0.49	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
trans-1,3-Dichloropropene	ND	0.34	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,2,3-Trichlorobenzene	ND	0.13	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,2,4-Trichlorobenzene	ND	0.24	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,1,1-Trichloroethane	ND	0.30	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,1,2-Trichloroethane	ND	0.19	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Trichloroethene (TCE)	ND	0.20	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Trichlorofluoromethane	ND	0.092	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
1,2,3-Trichloropropane	ND	0.44	2.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Vinyl chloride	ND	0.20	1.0	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Xylenes, Total	ND	0.55	1.5	P	µg/L	1	3/19/2021 1:44:17 AM	A76055
Surr: 1,2-Dichloroethane-d4	90.3	0	70-130	P	%Rec	1	3/19/2021 1:44:17 AM	A76055
Surr: 4-Bromofluorobenzene	85.6	0	70-130	P	%Rec	1	3/19/2021 1:44:17 AM	A76055
Surr: Dibromofluoromethane	97.7	0	70-130	P	%Rec	1	3/19/2021 1:44:17 AM	A76055
Surr: Toluene-d8	81.7	0	70-130	P	%Rec	1	3/19/2021 1:44:17 AM	A76055

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2103612**
Date Reported: **4/8/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 1st Quarter
Collection Date:
Lab ID: 2103612-013B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0062	0.0094		µg/L	1	3/16/2021 9:00:41 PM	58711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58726** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **58726** RunNo: **75962**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2688217** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: **LLLCS-58726** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **58726** RunNo: **75962**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2688219** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.012	0.020	0.01000	0	121	50	150			J
Barium	0.0024	0.0030	0.002000	0	119	50	150			J
Beryllium	0.0021	0.0020	0.002000	0	106	50	150			
Boron	0.040	0.040	0.04000	0	99.6	50	150			J
Cadmium	0.0024	0.0020	0.002000	0	119	50	150			
Calcium	0.49	1.0	0.5000	0	98.8	50	150			J
Chromium	0.0064	0.0060	0.006000	0	106	50	150			
Cobalt	0.0052	0.0060	0.006000	0	86.5	50	150			J
Copper	0.0050	0.0060	0.006000	0	83.8	50	150			J
Iron	0.022	0.050	0.02000	0	110	50	150			J
Magnesium	0.49	1.0	0.5000	0	97.8	50	150			J
Manganese	0.0020	0.0020	0.002000	0	98.2	50	150			J
Molybdenum	0.0059	0.0080	0.008000	0	74.3	50	150			J
Nickel	0.0069	0.010	0.005000	0	138	50	150			J
Potassium	0.44	1.0	0.5000	0	87.9	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LLLCS-58726** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **58726** RunNo: **75962**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2688219** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.0042	0.0050	0.005000	0	83.0	50	150			J
Sodium	0.51	1.0	0.5000	0	102	50	150			J
Zinc	0.0093	0.010	0.01000	0	92.9	50	150			J

Sample ID: **LCS-58726** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **58726** RunNo: **75962**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2688221** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	105	85	115			
Barium	0.51	0.0030	0.5000	0	101	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Boron	0.52	0.040	0.5000	0	105	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Calcium	48	1.0	50.00	0	96.9	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.50	0.0060	0.5000	0	100	85	115			
Copper	0.48	0.0060	0.5000	0	95.9	85	115			
Iron	0.50	0.050	0.5000	0	100	85	115			
Magnesium	48	1.0	50.00	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	96.6	85	115			
Molybdenum	0.52	0.0080	0.5000	0	103	85	115			
Nickel	0.49	0.010	0.5000	0	97.9	85	115			
Potassium	46	1.0	50.00	0	92.9	85	115			
Silver	0.097	0.0050	0.1000	0	97.4	85	115			
Sodium	48	1.0	50.00	0	96.1	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Sample ID: **2103612-006GMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-18** Batch ID: **58726** RunNo: **75962**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2688549** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.53	0.0020	0.5000	0	106	70	130			
Boron	0.95	0.040	0.5000	0.3980	110	70	130			
Cadmium	0.50	0.0020	0.5000	0	99.4	70	130			
Chromium	0.52	0.0060	0.5000	0	103	70	130			
Cobalt	0.49	0.0060	0.5000	0	98.5	70	130			
Copper	0.51	0.0060	0.5000	0	103	70	130			
Molybdenum	0.51	0.0080	0.5000	0	103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103612-006GMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-18** Batch ID: **58726** RunNo: **75962**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2688549** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.49	0.010	0.5000	0.003598	96.7	70	130			
Zinc	0.48	0.010	0.5000	0	96.8	70	130			

Sample ID: **2103612-006GMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-18** Batch ID: **58726** RunNo: **75962**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2688550** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.51	0.0020	0.5000	0	102	70	130	3.59	20	
Boron	0.94	0.040	0.5000	0.3980	107	70	130	1.39	20	
Cadmium	0.49	0.0020	0.5000	0	97.3	70	130	2.15	20	
Chromium	0.50	0.0060	0.5000	0	101	70	130	2.17	20	
Cobalt	0.48	0.0060	0.5000	0	96.0	70	130	2.59	20	
Copper	0.52	0.0060	0.5000	0	104	70	130	1.00	20	
Molybdenum	0.51	0.0080	0.5000	0	102	70	130	0.724	20	
Nickel	0.48	0.010	0.5000	0.003598	95.1	70	130	1.61	20	
Zinc	0.47	0.010	0.5000	0	94.7	70	130	2.20	20	

Sample ID: **2103612-006GMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-18** Batch ID: **58726** RunNo: **75962**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2688552** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	1.9	0.10	0.5000	0.8135	211	70	130			S
Barium	2.7	0.015	0.5000	2.292	80.8	70	130			
Iron	3.0	0.25	0.5000	2.417	110	70	130			
Manganese	2.8	0.010	0.5000	2.404	86.1	70	130			

Sample ID: **2103612-006GMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-18** Batch ID: **58726** RunNo: **75962**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2688553** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	1.9	0.10	0.5000	0.8135	208	70	130	0.811	20	S
Barium	2.6	0.015	0.5000	2.292	69.8	70	130	2.07	20	S
Iron	3.0	0.25	0.5000	2.417	124	70	130	2.22	20	
Manganese	2.8	0.010	0.5000	2.404	85.9	70	130	0.0364	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **A76106**	RunNo: **76106**
Prep Date:	Analysis Date: **3/22/2021**	SeqNo: **2694615** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **A76106**	RunNo: **76106**
Prep Date:	Analysis Date: **3/22/2021**	SeqNo: **2694617** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.018	0.050	0.02000	0	88.5	50	150			J
Zinc	0.0086	0.010	0.01000	0	85.8	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **A76106**	RunNo: **76106**
Prep Date:	Analysis Date: **3/22/2021**	SeqNo: **2694619** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.050	0.5000	0	98.3	85	115			
Zinc	0.50	0.010	0.5000	0	99.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A76034** RunNo: **76034**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2691454** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A76034** RunNo: **76034**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2691455** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	92.3	50	150			J
Beryllium	0.0027	0.0020	0.002000	0	134	50	150			
Boron	0.040	0.040	0.04000	0	99.0	50	150			J
Cadmium	0.0025	0.0020	0.002000	0	125	50	150			
Calcium	0.53	1.0	0.5000	0	106	50	150			J
Chromium	0.0050	0.0060	0.006000	0	83.7	50	150			J
Cobalt	0.0057	0.0060	0.006000	0	95.7	50	150			J
Copper	0.0053	0.0060	0.006000	0	89.0	50	150			J
Iron	0.022	0.020	0.02000	0	109	50	150			
Magnesium	0.52	1.0	0.5000	0	104	50	150			J
Manganese	0.0020	0.0020	0.002000	0	98.5	50	150			J
Molybdenum	0.0081	0.0080	0.008000	0	102	50	150			
Nickel	0.0062	0.010	0.005000	0	123	50	150			J
Potassium	0.44	1.0	0.5000	0	87.4	50	150			J
Silver	0.0048	0.0050	0.005000	0	95.6	50	150			J
Sodium	0.52	1.0	0.5000	0	103	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A76034** RunNo: **76034**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2691455** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.012	0.010	0.01000	0	119	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A76034** RunNo: **76034**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2691456** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.5	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.5	85	115			
Calcium	51	1.0	50.00	0	103	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.4	85	115			
Copper	0.48	0.0060	0.5000	0	95.9	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Manganese	0.48	0.0020	0.5000	0	96.9	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.6	85	115			
Nickel	0.47	0.010	0.5000	0	94.1	85	115			
Potassium	49	1.0	50.00	0	98.4	85	115			
Silver	0.097	0.0050	0.1000	0	97.4	85	115			
Sodium	50	1.0	50.00	0	101	85	115			
Zinc	0.49	0.010	0.5000	0	97.7	85	115			

Sample ID: **2103612-007EMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-11-21** Batch ID: **A76034** RunNo: **76034**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2691535** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.0020	0.5000	0	109	70	130			
Beryllium	0.55	0.0020	0.5000	0	110	70	130			
Boron	0.56	0.040	0.5000	0	112	70	130			
Cadmium	0.56	0.0020	0.5000	0	112	70	130			
Calcium	55	1.0	50.00	0	110	70	130			
Chromium	0.54	0.0060	0.5000	0	109	70	130			
Cobalt	0.55	0.0060	0.5000	0	110	70	130			
Copper	0.48	0.0060	0.5000	0	95.0	70	130			
Iron	0.54	0.020	0.5000	0	108	70	130			
Magnesium	51	1.0	50.00	0	101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103612-007EMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-11-21** Batch ID: **A76034** RunNo: **76034**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2691535** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.51	0.0020	0.5000	0	103	70	130			
Molybdenum	0.54	0.0080	0.5000	0	107	70	130			
Nickel	0.54	0.010	0.5000	0	107	70	130			
Potassium	47	1.0	50.00	0	94.6	70	130			
Silver	0.11	0.0050	0.1000	0	106	70	130			
Sodium	53	1.0	50.00	0	105	70	130			

Sample ID: **2103612-007EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 3-11-21** Batch ID: **A76034** RunNo: **76034**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2691536** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.55	0.0020	0.5000	0	110	70	130	0.669	20	
Beryllium	0.56	0.0020	0.5000	0	111	70	130	1.68	20	
Boron	0.56	0.040	0.5000	0	112	70	130	0.742	20	
Cadmium	0.57	0.0020	0.5000	0	113	70	130	0.690	20	
Calcium	54	1.0	50.00	0	109	70	130	0.764	20	
Chromium	0.55	0.0060	0.5000	0	110	70	130	0.888	20	
Cobalt	0.55	0.0060	0.5000	0	111	70	130	0.693	20	
Copper	0.47	0.0060	0.5000	0	94.8	70	130	0.191	20	
Iron	0.53	0.020	0.5000	0	107	70	130	1.25	20	
Magnesium	50	1.0	50.00	0	101	70	130	0.793	20	
Manganese	0.51	0.0020	0.5000	0	103	70	130	0.190	20	
Molybdenum	0.54	0.0080	0.5000	0	108	70	130	1.02	20	
Nickel	0.54	0.010	0.5000	0	108	70	130	0.607	20	
Potassium	47	1.0	50.00	0	94.0	70	130	0.607	20	
Silver	0.11	0.0050	0.1000	0	108	70	130	1.23	20	
Sodium	53	1.0	50.00	0	105	70	130	0.230	20	

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A76065** RunNo: **76065**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2692634** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Calcium	ND	1.0								
Zinc	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A76065** RunNo: **76065**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2692635** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.011	0.020	0.01000	0	115	50	150			J
Calcium	0.55	1.0	0.5000	0	110	50	150			J
Zinc	0.0097	0.010	0.01000	0	96.9	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A76065** RunNo: **76065**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2692636** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	106	85	115			
Calcium	50	1.0	50.00	0	100	85	115			
Zinc	0.49	0.010	0.5000	0	98.6	85	115			

Sample ID: **2103612-003EMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MKTF-47** Batch ID: **A76065** RunNo: **76065**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2692660** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.60	0.020	0.5000	0	121	70	130			

Sample ID: **2103612-003EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MKTF-47** Batch ID: **A76065** RunNo: **76065**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2692661** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.60	0.020	0.5000	0	121	70	130	0.00551	20	

Sample ID: **2103612-005FMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MKTF-35** Batch ID: **A76065** RunNo: **76065**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2692667** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.75	0.020	0.5000	0.1420	121	70	130			

Sample ID: **2103612-005FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MKTF-35** Batch ID: **A76065** RunNo: **76065**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2692668** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.75	0.020	0.5000	0.1420	122	70	130	0.799	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A76106** RunNo: **76106**
Prep Date: Analysis Date: **3/22/2021** SeqNo: **2694616** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A76106** RunNo: **76106**
Prep Date: Analysis Date: **3/22/2021** SeqNo: **2694618** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.018	0.020	0.02000	0	88.5	50	150			J
Zinc	0.0086	0.010	0.01000	0	85.8	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A76106** RunNo: **76106**
Prep Date: Analysis Date: **3/22/2021** SeqNo: **2694620** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.020	0.5000	0	98.3	85	115			
Zinc	0.50	0.010	0.5000	0	99.4	85	115			

Sample ID: **2103612-006FMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MKTF-18** Batch ID: **A76106** RunNo: **76106**
Prep Date: Analysis Date: **3/22/2021** SeqNo: **2694639** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.52	0.010	0.5000	0.01529	101	70	130			

Sample ID: **2103612-006FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MKTF-18** Batch ID: **A76106** RunNo: **76106**
Prep Date: Analysis Date: **3/22/2021** SeqNo: **2694640** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.51	0.010	0.5000	0.01529	99.2	70	130	1.43	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58726** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **58726** RunNo: **75986**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689371** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	0.000035	0.00050								J
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: **MSLLLCS-58726** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **58726** RunNo: **75986**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689372** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	99.5	50	150			J
Arsenic	0.00096	0.0010	0.001000	0	95.6	50	150			J
Lead	0.00050	0.00050	0.0005000	0	99.4	50	150			J
Selenium	0.00081	0.0010	0.001000	0	81.1	50	150			J

Sample ID: **MSLCS-58726** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **58726** RunNo: **75986**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689373** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.8	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.1	85	115			
Lead	0.012	0.00050	0.01250	0	95.9	85	115			
Selenium	0.023	0.0010	0.02500	0	91.9	85	115			
Thallium	0.012	0.00025	0.01250	0	95.4	85	115			

Sample ID: **MSLLLCS-TL-58726** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **58726** RunNo: **75986**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689374** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	0.00024	0.00025	0.0002500	0	97.1	50	150			J

Sample ID: **2103612-005GMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-35** Batch ID: **58726** RunNo: **75986**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689390** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.029	0.0010	0.02500	0.003984	101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103612-005GMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-35** Batch ID: **58726** RunNo: **75986**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689390** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.027	0.0010	0.02500	0.001990	99.6	70	130			
Thallium	0.012	0.00025	0.01250	0	94.6	70	130			

Sample ID: **2103612-005GMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-35** Batch ID: **58726** RunNo: **75986**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689401** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0077	0.0050	0.02500	0	30.7	70	130			S
Lead	0.027	0.0025	0.01250	0.01532	90.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B75953** RunNo: **75953**
Prep Date: Analysis Date: **3/15/2021** SeqNo: **2688654** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00050								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B75953** RunNo: **75953**
Prep Date: Analysis Date: **3/15/2021** SeqNo: **2688655** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	101	50	150			
Arsenic	0.0011	0.0010	0.001000	0	106	50	150			
Lead	0.00052	0.00050	0.0005000	0	105	50	150			
Selenium	0.00099	0.0010	0.001000	0	99.0	50	150			J
Thallium	0.00051	0.00050	0.0005000	0	102	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B75953** RunNo: **75953**
Prep Date: Analysis Date: **3/15/2021** SeqNo: **2688656** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.5	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.3	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.025	0.0010	0.02500	0	98.5	85	115			
Thallium	0.013	0.00050	0.01250	0	100	85	115			

Sample ID: **2103612-001DMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BW-4B** Batch ID: **B75953** RunNo: **75953**
Prep Date: Analysis Date: **3/15/2021** SeqNo: **2688693** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0.0007214	94.0	70	130			
Arsenic	0.034	0.0010	0.02500	0.006635	111	70	130			
Lead	0.010	0.00050	0.01250	.00009367	83.1	70	130			
Selenium	0.027	0.0010	0.02500	0	109	70	130			
Thallium	0.010	0.00050	0.01250	0	83.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B75975** RunNo: **75975**
Prep Date: Analysis Date: **3/16/2021** SeqNo: **2688857** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.0010								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B75975** RunNo: **75975**
Prep Date: Analysis Date: **3/16/2021** SeqNo: **2688858** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00077	0.0010	0.001000	0	76.7	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B75975** RunNo: **75975**
Prep Date: Analysis Date: **3/16/2021** SeqNo: **2688859** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.024	0.0010	0.02500	0	96.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58766** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **58766** RunNo: **76005**
Prep Date: **3/16/2021** Analysis Date: **3/17/2021** SeqNo: **2690231** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-58766** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **58766** RunNo: **76005**
Prep Date: **3/16/2021** Analysis Date: **3/17/2021** SeqNo: **2690232** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00014	0.00020	0.0001500	0	90.1	50	150			J

Sample ID: **LCS-58766** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **58766** RunNo: **76005**
Prep Date: **3/16/2021** Analysis Date: **3/17/2021** SeqNo: **2690233** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	100	85	115			

Sample ID: **MB-58801** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **58801** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691843** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-58801** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **58801** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691844** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00012	0.00020	0.0001500	0	77.1	50	150			J

Sample ID: **LCS-58801** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **58801** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691845** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103612-004EMS** SampType: **MS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **MKTF-38** Batch ID: **58801** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691879** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0055	0.00020	0.005000	0	109	75	125			

Sample ID: **2103612-004EMSD** SampType: **MSD** TestCode: **EPA Method 245.1: Mercury**
Client ID: **MKTF-38** Batch ID: **58801** RunNo: **76049**
Prep Date: **3/17/2021** Analysis Date: **3/18/2021** SeqNo: **2691880** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	107	75	125	2.17	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R75904** RunNo: **75904**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685712** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R75904** RunNo: **75904**
Prep Date: Analysis Date: **3/11/2021** SeqNo: **2685713** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			
Chloride	4.7	0.50	5.000	0	94.1	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.4	90	110			
Bromide	2.6	0.10	2.500	0	103	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.2	90	110			
Phosphorus, Orthophosphate (As P	4.5	0.50	5.000	0	90.3	90	110			
Sulfate	9.7	0.50	10.00	0	96.6	90	110			

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R75934** RunNo: **75934**
Prep Date: Analysis Date: **3/12/2021** SeqNo: **2687173** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R75934** RunNo: **75934**
Prep Date: Analysis Date: **3/12/2021** SeqNo: **2687179** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.7	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **MB-58711** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687472** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-58711** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687474** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-58711** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687476** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	114	70	130			

Sample ID: **LCSD-58711** SampType: **LCSD** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02** Batch ID: **58711** RunNo: **75943**
Prep Date: **3/15/2021** Analysis Date: **3/15/2021** SeqNo: **2687477** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	107	70	130	5.93	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **LCSD-58760**	SampType: **LCSD**	TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **LCSS02**	Batch ID: **58760**	RunNo: **76431**
Prep Date: **3/16/2021**	Analysis Date: **3/23/2021**	SeqNo: **2707379** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.25	0.085	0.6000	0	41.9	21.1	126	5.79	20	
Surr: DNOP	0.058		0.06000		96.3	45.1	141	0	0	

Sample ID: **MB-58760**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **PBW**	Batch ID: **58760**	RunNo: **76431**
Prep Date: **3/16/2021**	Analysis Date: **3/23/2021**	SeqNo: **2707381** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.085								
Motor Oil Range Organics (MRO)	ND	0.60								
Surr: DNOP	0.11		0.1200		89.6	45.1	141			

Sample ID: **LCS-58760**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **LCSW**	Batch ID: **58760**	RunNo: **76431**
Prep Date: **3/16/2021**	Analysis Date: **3/23/2021**	SeqNo: **2707382** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.27	0.085	0.6000	0	44.4	21.1	126			
Surr: DNOP	0.053		0.06000		87.6	45.1	141			

NOTES:
See the Case Narrative Regarding the DRO results listed above.
See the Case Narrative Regarding the DRO results listed above.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A76015**	RunNo: **76015**
Prep Date:	Analysis Date: **3/17/2021**	SeqNo: **2690792** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	92.1	70	130			
Toluene	18	1.0	20.00	0	90.8	70	130			
Chlorobenzene	17	1.0	20.00	0	84.0	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	89.3	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	84.9	70	130			
Surr: 1,2-Dichloroethane-d4	8.5		10.00		85.3	70	130			
Surr: 4-Bromofluorobenzene	8.5		10.00		84.7	70	130			
Surr: Dibromofluoromethane	8.8		10.00		87.6	70	130			
Surr: Toluene-d8	8.3		10.00		83.3	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A76015**	RunNo: **76015**
Prep Date:	Analysis Date: **3/17/2021**	SeqNo: **2690819** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A76015**	RunNo: **76015**
Prep Date:	Analysis Date: **3/17/2021**	SeqNo: **2690819** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690819** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.5		10.00		84.9	70	130			
Surr: 4-Bromofluorobenzene	8.6		10.00		85.9	70	130			
Surr: Dibromofluoromethane	8.7		10.00		86.8	70	130			
Surr: Toluene-d8	8.3		10.00		82.6	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **A76055** RunNo: **76055**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2692166** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.4	70	130			
Toluene	18	1.0	20.00	0	92.4	70	130			
Chlorobenzene	17	1.0	20.00	0	86.2	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	94.6	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	91.9	70	130			
Surr: 1,2-Dichloroethane-d4	8.7		10.00		87.1	70	130			
Surr: 4-Bromofluorobenzene	8.7		10.00		86.9	70	130			
Surr: Dibromofluoromethane	9.2		10.00		92.3	70	130			
Surr: Toluene-d8	8.4		10.00		84.1	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A76055** RunNo: **76055**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2692204** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A76055**	RunNo: **76055**
Prep Date:	Analysis Date: **3/18/2021**	SeqNo: **2692204** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	0.41	3.0								J
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A76055** RunNo: **76055**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2692204** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.9		10.00		88.8	70	130			
Surr: 4-Bromofluorobenzene	8.5		10.00		84.8	70	130			
Surr: Dibromofluoromethane	9.0		10.00		89.6	70	130			
Surr: Toluene-d8	8.3		10.00		83.3	70	130			

Sample ID: **2103612-002a ms** SampType: **MS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-44** Batch ID: **A76093** RunNo: **76093**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2694032** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.0	70	130			
Toluene	16	1.0	20.00	0	80.8	70	130			
Chlorobenzene	15	1.0	20.00	0	75.1	70	130			
1,1-Dichloroethene	16	1.0	20.00	0	80.1	70	130			
Trichloroethene (TCE)	16	1.0	20.00	0	82.1	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.4	70	130			
Surr: 4-Bromofluorobenzene	8.6		10.00		85.9	70	130			
Surr: Dibromofluoromethane	9.0		10.00		90.2	70	130			
Surr: Toluene-d8	8.1		10.00		80.7	70	130			

Sample ID: **2103612-002a msd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-44** Batch ID: **A76093** RunNo: **76093**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2694033** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130	22.3	20	R
Toluene	20	1.0	20.00	0	99.0	70	130	20.2	20	R

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103612-002a msd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-44** Batch ID: **A76093** RunNo: **76093**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2694033** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chlorobenzene	18	1.0	20.00	0	91.3	70	130	19.6	20	
1,1-Dichloroethene	20	1.0	20.00	0	99.2	70	130	21.3	20	R
Trichloroethene (TCE)	19	1.0	20.00	0	97.2	70	130	16.9	20	
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.1	70	130	0	0	
Surr: 4-Bromofluorobenzene	8.8		10.00		87.7	70	130	0	0	
Surr: Dibromofluoromethane	9.3		10.00		92.7	70	130	0	0	
Surr: Toluene-d8	8.4		10.00		84.2	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A76093** RunNo: **76093**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2694058** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A76093**	RunNo: **76093**
Prep Date:	Analysis Date: **3/19/2021**	SeqNo: **2694058** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **A76093** RunNo: **76093**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2694058** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.1		10.00		90.9	70	130			
Surr: 4-Bromofluorobenzene	8.4		10.00		84.0	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.9	70	130			
Surr: Toluene-d8	7.9		10.00		79.2	70	130			

Sample ID: **100ng lcsd4** SampType: **LCS4** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **BatchQC** Batch ID: **R76128** RunNo: **76128**
Prep Date: Analysis Date: **3/22/2021** SeqNo: **2695333** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	19	1.0	20.00	0	96.0	70	130			
Ethylbenzene	19	1.0	20.00	0	95.8	70	130			
Methyl tert-butyl ether (MTBE)	40	1.0	40.00	0	101	70	130			
1,2,4-Trimethylbenzene	19	1.0	20.00	0	94.3	70	130			
1,3,5-Trimethylbenzene	19	1.0	20.00	0	93.1	70	130			
1,2-Dichloroethane (EDC)	21	1.0	20.00	0	105	70	130			
1,2-Dibromoethane (EDB)	19	1.0	20.00	0	93.9	70	130			
Naphthalene	17	2.0	20.00	0	86.3	70	130			
1-Methylnaphthalene	14	4.0	20.00	0	72.3	70	130			
2-Methylnaphthalene	17	4.0	20.00	0	84.2	70	130			
Acetone	36	10	40.00	0	90.6	55.4	145			
Bromobenzene	20	1.0	20.00	0	97.8	70	130			
Bromodichloromethane	18	1.0	20.00	0	90.2	70	130			
Bromoform	18	1.0	20.00	0	89.8	70	130			
Bromomethane	23	3.0	20.00	0	113	33.5	169			
2-Butanone	44	10	40.00	0	109	58.8	140			
Carbon disulfide	41	10	40.00	0	103	70	130			
Carbon Tetrachloride	21	1.0	20.00	0	103	70	130			
Chlorobenzene	18	1.0	20.00	0	90.3	70	130			
Chloroethane	21	2.0	20.00	0	103	51.4	145			
Chloroform	21	1.0	20.00	0	106	70	130			
Chloromethane	23	3.0	20.00	0	114	37.9	148			
2-Chlorotoluene	18	1.0	20.00	0	91.7	70	130			
4-Chlorotoluene	18	1.0	20.00	0	88.1	70	130			
cis-1,2-DCE	21	1.0	20.00	0	104	70	130			
cis-1,3-Dichloropropene	18	1.0	20.00	0	91.9	70	130			
1,2-Dibromo-3-chloropropane	19	2.0	20.00	0	95.3	70	130			
Dibromochloromethane	20	1.0	20.00	0	99.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **100ng lcsd4** SampType: **LCS4** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **BatchQC** Batch ID: **R76128** RunNo: **76128**
Prep Date: Analysis Date: **3/22/2021** SeqNo: **2695333** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dibromomethane	19	1.0	20.00	0	94.2	70	130			
1,2-Dichlorobenzene	18	1.0	20.00	0	90.3	70	130			
1,3-Dichlorobenzene	19	1.0	20.00	0	93.7	70	130			
1,4-Dichlorobenzene	19	1.0	20.00	0	93.5	70	130			
Dichlorodifluoromethane	19	1.0	20.00	0	94.7	40.4	152			
1,1-Dichloroethane	22	1.0	20.00	0	108	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	107	70	130			
1,2-Dichloropropane	22	1.0	20.00	0	109	69.3	130			
1,3-Dichloropropane	20	1.0	20.00	0	98.2	70	130			
2,2-Dichloropropane	21	2.0	20.00	0	104	70	130			
1,1-Dichloropropene	22	1.0	20.00	0	109	70	130			
Hexachlorobutadiene	19	1.0	20.00	0	94.4	70	130			
2-Hexanone	39	10	40.00	0	97.7	70	130			
Isopropylbenzene	19	1.0	20.00	0	95.9	70	130			
4-Isopropyltoluene	19	1.0	20.00	0	96.6	70	130			
4-Methyl-2-pentanone	46	10	40.00	0	115	70	130			
Methylene Chloride	22	3.0	20.00	0	111	70	130			
n-Butylbenzene	20	3.0	20.00	0	98.4	70	130			
n-Propylbenzene	19	1.0	20.00	0	93.4	70	130			
sec-Butylbenzene	19	1.0	20.00	0	95.7	70	130			
Styrene	19	1.0	20.00	0	95.9	70	130			
tert-Butylbenzene	19	1.0	20.00	0	93.6	70	130			
1,1,1,2-Tetrachloroethane	20	1.0	20.00	0	97.8	70	130			
1,1,2,2-Tetrachloroethane	19	2.0	20.00	0	93.3	70	130			
Tetrachloroethene (PCE)	18	1.0	20.00	0	88.2	70	130			
trans-1,2-DCE	21	1.0	20.00	0	104	70	130			
trans-1,3-Dichloropropene	20	1.0	20.00	0	97.6	70	130			
1,2,3-Trichlorobenzene	18	1.0	20.00	0	91.1	70	130			
1,2,4-Trichlorobenzene	18	1.0	20.00	0	89.4	70	130			
1,1,1-Trichloroethane	21	1.0	20.00	0	104	70	130			
1,1,2-Trichloroethane	19	1.0	20.00	0	96.0	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	107	70	130			
Trichlorofluoromethane	21	1.0	20.00	0	106	70	130			
1,2,3-Trichloropropane	20	2.0	20.00	0	101	70	130			
Vinyl chloride	21	1.0	20.00	0	103	57.9	134			
Xylenes, Total	57	1.5	60.00	0	95.4	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.5	70	130			
Surr: 4-Bromofluorobenzene	8.0		10.00		79.9	70	130			
Surr: Dibromofluoromethane	9.4		10.00		94.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **100ng lcsd4**	SampType: **LCS4**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **BatchQC**	Batch ID: **R76128**	RunNo: **76128**						
Prep Date:	Analysis Date: **3/22/2021**	SeqNo: **2695333**	Units: **µg/L**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Toluene-d8	8.3		10.00		82.5	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **PBW**	Batch ID: **R76128**	RunNo: **76128**						
Prep Date:	Analysis Date: **3/22/2021**	SeqNo: **2695358**	Units: **µg/L**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R76128**	RunNo: **76128**
Prep Date:	Analysis Date: **3/22/2021**	SeqNo: **2695358** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.7		10.00		86.7	70	130			
Surr: 4-Bromofluorobenzene	8.8		10.00		88.2	70	130			
Surr: Dibromofluoromethane	9.2		10.00		92.4	70	130			
Surr: Toluene-d8	8.3		10.00		83.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58720**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**							
Client ID: **PBW**	Batch ID: **58720**	RunNo: **76019**							
Prep Date: **3/15/2021**	Analysis Date: **3/17/2021**	SeqNo: **2690930**	Units: **µg/L**						

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Azobenzene	ND	5.0								
Benzoic acid	ND	5.0								
Benzyl alcohol	ND	5.0								
Bis(2-chloroethoxy)methane	ND	5.0								
Bis(2-chloroethyl)ether	ND	5.0								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	8.4	10								J
4-Bromophenyl phenyl ether	ND	5.0								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
2-Chloronaphthalene	ND	5.0								
2-Chlorophenol	ND	5.0								
4-Chlorophenyl phenyl ether	ND	5.0								
Di-n-butyl phthalate	7.7	10								J
Di-n-octyl phthalate	9.2	10								J
Dibenzofuran	ND	5.0								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
3,3´-Dichlorobenzidine	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	5.0								
4,6-Dinitro-2-methylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	5.0								
Hexachlorobenzene	ND	5.0								
Hexachlorobutadiene	ND	5.0								
Hexachlorocyclopentadiene	ND	5.0								
Hexachloroethane	ND	5.0								
Isophorone	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
N-Nitrosodi-n-propylamine	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58720** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **58720** RunNo: **76019**
Prep Date: **3/15/2021** Analysis Date: **3/17/2021** SeqNo: **2690930** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	5.0								
2-Nitroaniline	ND	5.0								
3-Nitroaniline	ND	5.0								
4-Nitroaniline	ND	5.0								
Nitrobenzene	ND	5.0								
2-Nitrophenol	ND	5.0								
4-Nitrophenol	ND	5.0								
Pentachlorophenol	ND	5.0								
Phenol	ND	5.0								
Pyridine	ND	5.0								
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	120		200.0		59.6	15	88.8			
Surr: Phenol-d5	99		200.0		49.5	15	71.9			
Surr: 2,4,6-Tribromophenol	140		200.0		70.6	15	97.4			
Surr: Nitrobenzene-d5	64		100.0		64.1	15	117			
Surr: 2-Fluorobiphenyl	61		100.0		61.2	15	100			
Surr: 4-Terphenyl-d14	95		100.0		95.4	15	120			

Sample ID: **lcs-58720** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **58720** RunNo: **76019**
Prep Date: **3/15/2021** Analysis Date: **3/17/2021** SeqNo: **2690931** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	110	5.0	200.0	0	57.3	27.5	113			
2-Chlorophenol	130	5.0	200.0	0	63.0	17.9	103			
1,4-Dichlorobenzene	53	5.0	100.0	0	52.9	15	79.9			
2,4-Dinitrotoluene	55	5.0	100.0	0	54.6	22.9	97.2			
N-Nitrosodi-n-propylamine	57	5.0	100.0	0	57.1	34.1	104			
4-Nitrophenol	97	5.0	200.0	0	48.5	20	78.8			
Pentachlorophenol	140	5.0	200.0	0	70.0	26.8	97.6			
Phenol	82	5.0	200.0	0	41.1	15	66.2			
1,2,4-Trichlorobenzene	55	5.0	100.0	0	55.4	15	88.2			
Surr: 2-Fluorophenol	80		200.0		40.2	15	88.8			
Surr: Phenol-d5	64		200.0		32.2	15	71.9			
Surr: 2,4,6-Tribromophenol	120		200.0		61.2	15	97.4			
Surr: Nitrobenzene-d5	51		100.0		51.1	15	117			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **lcs-58720** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **58720** RunNo: **76019**
Prep Date: **3/15/2021** Analysis Date: **3/17/2021** SeqNo: **2690931** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	46		100.0		46.3	15	100			
Surr: 4-Terphenyl-d14	110		100.0		109	15	120			

Sample ID: **lcsd-58720** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **58720** RunNo: **76019**
Prep Date: **3/15/2021** Analysis Date: **3/17/2021** SeqNo: **2690932** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	100	5.0	200.0	0	52.0	27.5	113	9.73	45.2	
2-Chlorophenol	110	5.0	200.0	0	56.4	17.9	103	11.1	51.8	
1,4-Dichlorobenzene	47	5.0	100.0	0	47.4	15	79.9	10.9	59.6	
2,4-Dinitrotoluene	48	5.0	100.0	0	48.2	22.9	97.2	12.5	46.5	
N-Nitrosodi-n-propylamine	49	5.0	100.0	0	49.0	34.1	104	15.3	47.7	
4-Nitrophenol	84	5.0	200.0	0	42.0	20	78.8	14.3	42.6	
Pentachlorophenol	120	5.0	200.0	0	60.8	26.8	97.6	14.0	48.7	
Phenol	76	5.0	200.0	0	38.2	15	66.2	7.21	47.1	
1,2,4-Trichlorobenzene	45	5.0	100.0	0	45.3	15	88.2	20.2	52.5	
Surr: 2-Fluorophenol	69		200.0		34.5	15	88.8	0	0	
Surr: Phenol-d5	56		200.0		27.8	15	71.9	0	0	
Surr: 2,4,6-Tribromophenol	97		200.0		48.6	15	97.4	0	0	
Surr: Nitrobenzene-d5	41		100.0		41.0	15	117	0	0	
Surr: 2-Fluorobiphenyl	40		100.0		39.5	15	100	0	0	
Surr: 4-Terphenyl-d14	95		100.0		95.4	15	120	0	0	

Sample ID: **mb-58736** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **58736** RunNo: **76129**
Prep Date: **3/16/2021** Analysis Date: **3/22/2021** SeqNo: **2695379** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Azobenzene	ND	5.0								
Benzoic acid	ND	5.0								
Benzyl alcohol	ND	5.0								
Bis(2-chloroethoxy)methane	ND	5.0								
Bis(2-chloroethyl)ether	ND	5.0								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	6.9	10								J
4-Bromophenyl phenyl ether	ND	5.0								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58736** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **58736** RunNo: **76129**
Prep Date: **3/16/2021** Analysis Date: **3/22/2021** SeqNo: **2695379** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
2-Chloronaphthalene	ND	5.0								
2-Chlorophenol	ND	5.0								
4-Chlorophenyl phenyl ether	ND	5.0								
Di-n-butyl phthalate	6.6	10								J
Di-n-octyl phthalate	9.1	10								J
Dibenzofuran	ND	5.0								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
3,3´-Dichlorobenzidine	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	5.0								
4,6-Dinitro-2-methylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	5.0								
Hexachlorobenzene	ND	5.0								
Hexachlorobutadiene	ND	5.0								
Hexachlorocyclopentadiene	ND	5.0								
Hexachloroethane	ND	5.0								
Isophorone	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
N-Nitrosodi-n-propylamine	ND	5.0								
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	5.0								
2-Nitroaniline	ND	5.0								
3-Nitroaniline	ND	5.0								
4-Nitroaniline	ND	5.0								
Nitrobenzene	ND	5.0								
2-Nitrophenol	ND	5.0								
4-Nitrophenol	ND	5.0								
Pentachlorophenol	ND	5.0								
Phenol	ND	5.0								
Pyridine	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58736** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **58736** RunNo: **76129**
Prep Date: **3/16/2021** Analysis Date: **3/22/2021** SeqNo: **2695379** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	150		200.0		72.8	15	88.8			
Surr: Phenol-d5	120		200.0		60.3	15	71.9			
Surr: 2,4,6-Tribromophenol	140		200.0		72.3	15	97.4			
Surr: Nitrobenzene-d5	72		100.0		72.3	15	117			
Surr: 2-Fluorobiphenyl	72		100.0		72.4	15	100			
Surr: 4-Terphenyl-d14	120		100.0		117	15	120			

Sample ID: **lcs-58736** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **58736** RunNo: **76129**
Prep Date: **3/16/2021** Analysis Date: **3/22/2021** SeqNo: **2695380** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	140	5.0	200.0	0	68.1	27.5	113			
2-Chlorophenol	150	5.0	200.0	0	76.3	17.9	103			
1,4-Dichlorobenzene	61	5.0	100.0	0	60.7	15	79.9			
2,4-Dinitrotoluene	58	5.0	100.0	0	58.3	22.9	97.2			
N-Nitrosodi-n-propylamine	65	5.0	100.0	0	65.2	34.1	104			
4-Nitrophenol	87	5.0	200.0	0	43.5	20	78.8			
Pentachlorophenol	120	5.0	200.0	0	58.5	26.8	97.6			
Phenol	100	5.0	200.0	0	50.7	15	66.2			
1,2,4-Trichlorobenzene	58	5.0	100.0	0	57.8	15	88.2			
Surr: 2-Fluorophenol	130		200.0		65.2	15	88.8			
Surr: Phenol-d5	110		200.0		54.0	15	71.9			
Surr: 2,4,6-Tribromophenol	130		200.0		65.2	15	97.4			
Surr: Nitrobenzene-d5	71		100.0		71.1	15	117			
Surr: 2-Fluorobiphenyl	69		100.0		69.0	15	100			
Surr: 4-Terphenyl-d14	100		100.0		105	15	120			

Sample ID: **lcsd-58736** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **58736** RunNo: **76129**
Prep Date: **3/16/2021** Analysis Date: **3/22/2021** SeqNo: **2695381** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	100	5.0	200.0	0	50.7	27.5	113	29.3	45.2	
2-Chlorophenol	120	5.0	200.0	0	60.4	17.9	103	23.3	51.8	
1,4-Dichlorobenzene	50	5.0	100.0	0	50.3	15	79.9	18.7	59.6	
2,4-Dinitrotoluene	46	5.0	100.0	0	46.3	22.9	97.2	22.9	46.5	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **lcsd-58736** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **58736** RunNo: **76129**
Prep Date: **3/16/2021** Analysis Date: **3/22/2021** SeqNo: **2695381** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Nitrosodi-n-propylamine	52	5.0	100.0	0	51.8	34.1	104	22.9	47.7	
4-Nitrophenol	83	5.0	200.0	0	41.4	20	78.8	4.89	42.6	
Pentachlorophenol	110	5.0	200.0	0	56.0	26.8	97.6	4.24	48.7	
Phenol	77	5.0	200.0	0	38.5	15	66.2	27.5	47.1	
1,2,4-Trichlorobenzene	51	5.0	100.0	0	51.1	15	88.2	12.5	52.5	
Surr: 2-Fluorophenol	74		200.0		37.1	15	88.8	0	0	
Surr: Phenol-d5	58		200.0		28.8	15	71.9	0	0	
Surr: 2,4,6-Tribromophenol	91		200.0		45.3	15	97.4	0	0	
Surr: Nitrobenzene-d5	44		100.0		44.5	15	117	0	0	
Surr: 2-Fluorobiphenyl	45		100.0		45.0	15	100	0	0	
Surr: 4-Terphenyl-d14	82		100.0		81.8	15	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58709** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **58709** RunNo: **75993**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689651** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthylene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.10								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.10								
Benzo(g,h,i)perylene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	2.0		4.000		50.0	26.3	112			
Surr: 2-Fluorobiphenyl	1.9		4.000		46.5	21.1	110			
Surr: 4-Terphenyl-d14	3.3		4.000		82.0	17.6	167			

Sample ID: **lcs-58709** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **58709** RunNo: **75993**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689653** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.1	0.10	2.000	0	57.0	18.5	83.4			
1-Methylnaphthalene	1.1	0.10	2.000	0	56.0	15.1	89.6			
2-Methylnaphthalene	1.1	0.10	2.000	0	57.0	15	90.6			
Acenaphthylene	1.1	0.10	2.000	0	55.0	18.2	95.3			
Acenaphthene	1.1	0.10	2.000	0	53.0	23.9	90.3			
Fluorene	1.1	0.10	2.000	0	54.0	16.8	106			
Phenanthrene	1.1	0.10	2.000	0	54.0	23.3	105			
Anthracene	1.1	0.10	2.000	0	57.0	15	112			
Fluoranthene	1.5	0.20	2.000	0	74.0	15.4	138			
Pyrene	1.3	0.20	2.000	0	64.0	15	128			
Benz(a)anthracene	1.5	0.10	2.000	0	75.0	38.7	111			
Chrysene	1.3	0.10	2.000	0	67.0	32.6	96.6			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **lcs-58709** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **58709** RunNo: **75993**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689653** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	1.4	0.10	2.000	0	70.0	23.8	113			
Benzo(k)fluoranthene	1.4	0.10	2.000	0	68.0	18.3	114			
Benzo(a)pyrene	1.4	0.070	2.000	0	68.0	24.5	123			
Dibenz(a,h)anthracene	1.4	0.10	2.000	0	72.0	17.8	118			
Benzo(g,h,i)perylene	1.4	0.10	2.000	0	71.0	22.2	110			
Indeno(1,2,3-cd)pyrene	1.4	0.30	2.000	0	72.0	20.8	115			
Surr: Nitrobenzene-d5	3.1		5.000		62.8	26.3	112			
Surr: 2-Fluorobiphenyl	2.9		5.000		58.4	21.1	110			
Surr: 4-Terphenyl-d14	4.4		5.000		88.0	17.6	167			

Sample ID: **lcsd-58709** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **58709** RunNo: **75993**
Prep Date: **3/15/2021** Analysis Date: **3/16/2021** SeqNo: **2689654** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.1	0.10	2.000	0	53.0	18.5	83.4	7.27	20	
1-Methylnaphthalene	1.0	0.10	2.000	0	52.0	15.1	89.6	7.41	20	
2-Methylnaphthalene	1.1	0.10	2.000	0	53.0	15	90.6	7.27	20	
Acenaphthylene	1.0	0.10	2.000	0	50.0	18.2	95.3	9.52	20	
Acenaphthene	0.96	0.10	2.000	0	48.0	23.9	90.3	9.90	20	
Fluorene	0.98	0.10	2.000	0	49.0	16.8	106	9.71	20	
Phenanthrene	0.98	0.10	2.000	0	49.0	23.3	105	9.71	20	
Anthracene	1.1	0.10	2.000	0	53.0	15	112	7.27	20	
Fluoranthene	1.3	0.20	2.000	0	66.0	15.4	138	11.4	20	
Pyrene	1.2	0.20	2.000	0	58.0	15	128	9.84	20	
Benz(a)anthracene	1.4	0.10	2.000	0	71.0	38.7	111	5.48	20	
Chrysene	1.3	0.10	2.000	0	66.0	32.6	96.6	1.50	20	
Benzo(b)fluoranthene	1.4	0.10	2.000	0	71.0	23.8	113	1.42	20	
Benzo(k)fluoranthene	1.4	0.10	2.000	0	69.0	18.3	114	1.46	20	
Benzo(a)pyrene	1.3	0.070	2.000	0	66.0	24.5	123	2.99	20	
Dibenz(a,h)anthracene	1.3	0.10	2.000	0	67.0	17.8	118	7.19	20	
Benzo(g,h,i)perylene	1.3	0.10	2.000	0	67.0	22.2	110	5.80	20	
Indeno(1,2,3-cd)pyrene	1.4	0.30	2.000	0	69.0	20.8	115	4.26	20	
Surr: Nitrobenzene-d5	2.8		5.000		55.2	26.3	112	0	0	
Surr: 2-Fluorobiphenyl	2.5		5.000		50.4	21.1	110	0	0	
Surr: 4-Terphenyl-d14	4.0		5.000		80.0	17.6	167	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **mb-58715** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **58715** RunNo: **76130**
Prep Date: **3/15/2021** Analysis Date: **3/22/2021** SeqNo: **2695366** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthylene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.10								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.10								
Benzo(g,h,i)perylene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	3.0		4.000		74.5	26.3	112			
Surr: 2-Fluorobiphenyl	2.2		4.000		56.0	21.1	110			
Surr: 4-Terphenyl-d14	3.3		4.000		82.5	17.6	167			

Sample ID: **lcs-58715** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **58715** RunNo: **76130**
Prep Date: **3/15/2021** Analysis Date: **3/22/2021** SeqNo: **2695367** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.86	0.10	2.000	0	43.0	15	69.4			
Naphthalene	1.6	0.10	2.000	0	78.0	18.5	83.4			
1-Methylnaphthalene	1.6	0.10	2.000	0	78.0	15.1	89.6			
2-Methylnaphthalene	1.6	0.10	2.000	0	79.0	15	90.6			
Acenaphthylene	1.7	0.10	2.000	0	86.0	18.2	95.3			
Acenaphthene	1.5	0.10	2.000	0	77.0	23.9	90.3			
Fluorene	1.6	0.10	2.000	0	81.0	16.8	106			
Phenanthrene	1.6	0.10	2.000	0	79.0	23.3	105			
Anthracene	1.7	0.10	2.000	0	85.0	15	112			
Fluoranthene	2.0	0.20	2.000	0	101	15.4	138			
Pyrene	1.7	0.20	2.000	0	85.0	15	128			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **lcs-58715** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **58715** RunNo: **76130**
Prep Date: **3/15/2021** Analysis Date: **3/22/2021** SeqNo: **2695367** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benz(a)anthracene	2.3	0.10	2.000	0	114	38.7	111			S
Chrysene	1.7	0.10	2.000	0	85.0	32.6	96.6			
Benzo(b)fluoranthene	2.3	0.10	2.000	0	117	23.8	113			S
Benzo(k)fluoranthene	2.0	0.10	2.000	0	99.0	18.3	114			
Benzo(a)pyrene	2.3	0.070	2.000	0	113	24.5	123			
Dibenz(a,h)anthracene	2.3	0.10	2.000	0	117	17.8	118			
Benzo(g,h,i)perylene	2.0	0.10	2.000	0	100	22.2	110			
Indeno(1,2,3-cd)pyrene	2.8	0.30	2.000	0	138	20.8	115			S
Surr: Nitrobenzene-d5	5.2		5.000		103	26.3	112			
Surr: 2-Fluorobiphenyl	4.3		5.000		85.6	21.1	110			
Surr: 4-Terphenyl-d14	5.6		5.000		112	17.6	167			

Sample ID: **lcsd-58715** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **58715** RunNo: **76130**
Prep Date: **3/15/2021** Analysis Date: **3/22/2021** SeqNo: **2695368** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.80	0.10	2.000	0	40.0	15	69.4	7.23	20	
Naphthalene	1.5	0.10	2.000	0	73.0	18.5	83.4	6.62	20	
1-Methylnaphthalene	1.4	0.10	2.000	0	72.0	15.1	89.6	8.00	20	
2-Methylnaphthalene	1.5	0.10	2.000	0	73.0	15	90.6	7.89	20	
Acenaphthylene	1.6	0.10	2.000	0	79.0	18.2	95.3	8.48	20	
Acenaphthene	1.4	0.10	2.000	0	72.0	23.9	90.3	6.71	20	
Fluorene	1.5	0.10	2.000	0	75.0	16.8	106	7.69	20	
Phenanthrene	1.5	0.10	2.000	0	74.0	23.3	105	6.54	20	
Anthracene	1.6	0.10	2.000	0	79.0	15	112	7.32	20	
Fluoranthene	2.0	0.20	2.000	0	102	15.4	138	0.985	20	
Pyrene	1.7	0.20	2.000	0	84.0	15	128	1.18	20	
Benz(a)anthracene	2.4	0.10	2.000	0	119	38.7	111	4.29	20	S
Chrysene	1.8	0.10	2.000	0	90.0	32.6	96.6	5.71	20	
Benzo(b)fluoranthene	2.4	0.10	2.000	0	120	23.8	113	2.53	20	S
Benzo(k)fluoranthene	2.1	0.10	2.000	0	103	18.3	114	3.96	20	
Benzo(a)pyrene	2.3	0.070	2.000	0	114	24.5	123	0.881	20	
Dibenz(a,h)anthracene	2.4	0.10	2.000	0	118	17.8	118	0.851	20	S
Benzo(g,h,i)perylene	2.1	0.10	2.000	0	103	22.2	110	2.96	20	
Indeno(1,2,3-cd)pyrene	4.8	0.30	2.000	0	241	20.8	115	54.4	20	RS
Surr: Nitrobenzene-d5	4.5		5.000		90.8	26.3	112	0	0	
Surr: 2-Fluorobiphenyl	3.6		5.000		71.2	21.1	110	0	0	
Surr: 4-Terphenyl-d14	5.4		5.000		108	17.6	167	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2.5ng gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **B76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690821** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.4	70	130			
Surr: BFB	9.8		10.00		97.5	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **B76015** RunNo: **76015**
Prep Date: Analysis Date: **3/17/2021** SeqNo: **2690848** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.017	0.050								J
Surr: BFB	9.5		10.00		94.9	70	130			

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **B76055** RunNo: **76055**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2692208** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	88.7	70	130			
Surr: BFB	9.8		10.00		97.6	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **B76055** RunNo: **76055**
Prep Date: Analysis Date: **3/18/2021** SeqNo: **2692241** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.017	0.050								J
Surr: BFB	9.5		10.00		95.5	70	130			

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **B76093** RunNo: **76093**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2694129** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.39	0.050	0.5000	0	77.3	70	130			
Surr: BFB	9.3		10.00		92.8	70	130			

Sample ID: **2103612-002a ms g** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-44** Batch ID: **B76093** RunNo: **76093**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2694130** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2103612**
08-Apr-21

Client: Marathon
Project: 2021 GW Sampling 1st Quarter

Sample ID: **2103612-002a ms g** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-44** Batch ID: **B76093** RunNo: **76093**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2694130** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.43	0.050	0.5000	0.01460	82.6	70	130			
Surr: BFB	9.4		10.00		94.1	70	130			

Sample ID: **2103612-002a msd g** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-44** Batch ID: **B76093** RunNo: **76093**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2694131** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0.01460	97.1	70	130	15.6	20	
Surr: BFB	9.6		10.00		96.2	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **B76093** RunNo: **76093**
Prep Date: Analysis Date: **3/19/2021** SeqNo: **2694138** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.014	0.050								J
Surr: BFB	9.3		10.00		92.6	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2103612** RcptNo: 1

Received By: **Sean Livingston** **3/11/2021 3:20:00 PM** Sean Livingston

Completed By: **Desiree Dominguez** **3/11/2021 3:21:48 PM** DD

Reviewed By: SGL 3/12/21

NO_2+NO_3: IO 03/11/2021

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐

Samples were collected the same day and chilled.

5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 17
(<2 or >12 unless noted)
Adjusted? NO
Checked by: IO 3/12/21

NO_2+NO_3 & pH<2 IO 3/11/21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks: Only VOC, GRO and Metals for BW-4B. Only VOC, GRO, Anions and total metals for MKTF-21 Only VOC & GRO for MKTF-16 IO 3/13/21

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.1					
2	5.4					
3	4.5					
4	7.8					

Released to Imaging: 11/23/2022 10:23:25 AM
Received by OCD: 3/25/2022 3:35:30 PM

Chain of Custody Record

Client: Marathon Petroleum Company	☑ Standard ☐ Rush
Mailing Address: 92 Giant Crossing Rd. Jamestown, NM 87347	Project Name: 2021 GW Sampling - 1st Quarter
Phone #: 808-640-1823	Project #: 697-080-001
email or Fax#: bmcloughlin@trihydro.com	Project Manager: Brian McLoughlin
QA/QC Package: ☐ Standard ☑ Level 4 (Full Validation)	Sampler:
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	On Ice: ☑ Yes ☐ No
☑ EDD (Type)	# of Coolers: 4
	Cooler Temp(including CF): See remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2103612	8260/BTEX/MTBE	TPH GRO	TPH DRO/MRO	SVOC includes 1,4 Dioxane on reques	1,4 Dioxane only	WQCC metals	C/A	NO2/NO3 combined	Nitrite	8011 EDB	BOD - VOC	COD	Cyanide	TDS/TSS	Gen Chem	PFAS
3-10	13:15	water	BW-4B	9		-001		X	X			X	X*				X					
3-11	11:45	water	MKTF-44	17		-002		X	X	X		X	X				X					
3-11	10:25	water	MKTF-47	17		-003		X	X	X	X	X	X				X					
3-11	10:10	water	MKTF-38	17		-004		X	X	X	X	X	X				X					
3-11	9:15	water	MKTF-35	15		-005		X	X	X		X	X			X	X					
3-11	9:45	water	MKTF-18	15		-006		X	X	X		X	X			X	X					
3-11	11:45	water	EB 3-11-21	17		-007		X	X	X		X	X				X					
3-11		water	DUP 3-11-21	15		-008		X	X	X		X	X			X	X					
3-10	13:15	water	Field Blank-3/10/2021	2		-009											X					
3-11	11:45	water	Field Blank 3/11/2021	2		-010											X					
3-11	11:15	water	MKTF 16*	6		-011											X					
3-11	10:50	water	MKTF 21	9		-012						X	X				X					

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
3/11/21	1:30		SGL	Courier	3/11/21	15:20
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks: ONLY VOC's on MKTF-16, BW-4B
4.1±0 VOC, Metal, C/A - MKTF-21
5.4±0
4.5±0 7.8±0 *Insufficent volume to run anions-ENM 3/11/21
Trip Blank-013

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

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HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

July 12, 2021

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL:
FAX

RE: 2021 GW Sampling 2nd Quarter OrderNo.: 2106895

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 10 sample(s) on 6/16/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/15/2021 2:20:00 PM
Lab ID: 2106895-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	9900	110	500		µg/L	500	6/18/2021 5:56:48 AM	R79176
Toluene	49	10	50	J	µg/L	50	6/18/2021 6:24:11 AM	R79176
Ethylbenzene	1300	11	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Methyl tert-butyl ether (MTBE)	43	20	50	J	µg/L	50	6/18/2021 6:24:11 AM	R79176
1,2,4-Trimethylbenzene	ND	6.1	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,3,5-Trimethylbenzene	ND	9.1	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,2-Dichloroethane (EDC)	ND	11	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,2-Dibromoethane (EDB)	ND	15	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Naphthalene	360	14	100		µg/L	50	6/18/2021 6:24:11 AM	R79176
1-Methylnaphthalene	70	42	200	J	µg/L	50	6/18/2021 6:24:11 AM	R79176
2-Methylnaphthalene	110	35	200	J	µg/L	50	6/18/2021 6:24:11 AM	R79176
Acetone	ND	120	500		µg/L	50	6/18/2021 6:24:11 AM	R79176
Bromobenzene	ND	14	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Bromodichloromethane	ND	10	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Bromoform	ND	16	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Bromomethane	ND	78	150		µg/L	50	6/18/2021 6:24:11 AM	R79176
2-Butanone	ND	56	500		µg/L	50	6/18/2021 6:24:11 AM	R79176
Carbon disulfide	ND	22	500		µg/L	50	6/18/2021 6:24:11 AM	R79176
Carbon Tetrachloride	ND	8.8	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Chlorobenzene	ND	6.8	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Chloroethane	ND	19	100		µg/L	50	6/18/2021 6:24:11 AM	R79176
Chloroform	ND	6.7	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Chloromethane	38	20	150	J	µg/L	50	6/18/2021 6:24:11 AM	R79176
2-Chlorotoluene	ND	6.6	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
4-Chlorotoluene	ND	26	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
cis-1,2-DCE	ND	19	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
cis-1,3-Dichloropropene	ND	18	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,2-Dibromo-3-chloropropane	ND	29	100		µg/L	50	6/18/2021 6:24:11 AM	R79176
Dibromochloromethane	ND	14	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Dibromomethane	ND	15	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,2-Dichlorobenzene	ND	7.7	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,3-Dichlorobenzene	ND	8.1	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,4-Dichlorobenzene	ND	10	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Dichlorodifluoromethane	ND	22	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,1-Dichloroethane	ND	14	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,1-Dichloroethene	ND	6.5	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,2-Dichloropropane	ND	6.7	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,3-Dichloropropane	ND	9.0	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
2,2-Dichloropropane	ND	13	100		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,1-Dichloropropene	ND	9.0	50		µg/L	50	6/18/2021 6:24:11 AM	R79176

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/15/2021 2:20:00 PM
Lab ID: 2106895-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	16	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
2-Hexanone	ND	90	500		µg/L	50	6/18/2021 6:24:11 AM	R79176
Isopropylbenzene	65	9.1	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
4-Isopropyltoluene	ND	10	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
4-Methyl-2-pentanone	ND	56	500		µg/L	50	6/18/2021 6:24:11 AM	R79176
Methylene Chloride	ND	20	150		µg/L	50	6/18/2021 6:24:11 AM	R79176
n-Butylbenzene	22	13	150	J	µg/L	50	6/18/2021 6:24:11 AM	R79176
n-Propylbenzene	180	9.1	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
sec-Butylbenzene	ND	30	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Styrene	ND	6.5	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
tert-Butylbenzene	ND	12	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,1,1,2-Tetrachloroethane	ND	13	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,1,2,2-Tetrachloroethane	ND	14	100		µg/L	50	6/18/2021 6:24:11 AM	R79176
Tetrachloroethene (PCE)	ND	18	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
trans-1,2-DCE	ND	24	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
trans-1,3-Dichloropropene	ND	17	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,2,3-Trichlorobenzene	ND	6.7	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,2,4-Trichlorobenzene	ND	12	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,1,1-Trichloroethane	ND	15	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,1,2-Trichloroethane	ND	9.4	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Trichloroethene (TCE)	ND	10	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Trichlorofluoromethane	ND	4.6	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
1,2,3-Trichloropropane	ND	22	100		µg/L	50	6/18/2021 6:24:11 AM	R79176
Vinyl chloride	ND	9.8	50		µg/L	50	6/18/2021 6:24:11 AM	R79176
Xylenes, Total	160	28	75		µg/L	50	6/18/2021 6:24:11 AM	R79176
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	50	6/18/2021 6:24:11 AM	R79176
Surr: 4-Bromofluorobenzene	99.3	0	70-130		%Rec	50	6/18/2021 6:24:11 AM	R79176
Surr: Dibromofluoromethane	101	0	70-130		%Rec	50	6/18/2021 6:24:11 AM	R79176
Surr: Toluene-d8	103	0	70-130		%Rec	50	6/18/2021 6:24:11 AM	R79176
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	32	1.4	2.5		mg/L	50	6/18/2021 6:24:11 AM	G79176
Surr: 4-Bromofluorobenzene	95.4	0	70-130		%Rec	50	6/18/2021 6:24:11 AM	G79176

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/15/2021 2:20:00 PM
Lab ID: 2106895-001B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	2.6	0.016	0.064		mg/L	1	6/24/2021 3:45:00 AM	60766
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/24/2021 3:45:00 AM	60766
Surr: DNOP	85.5	0	15-142		%Rec	1	6/24/2021 3:45:00 AM	60766

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/15/2021 2:20:00 PM
Lab ID: 2106895-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Azobenzene	ND	0.55	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Benzoic acid	ND	1.1	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Benzyl alcohol	ND	0.68	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Bis(2-ethylhexyl)phthalate	5.3	4.5	10	J	µg/L	1	6/23/2021 12:20:21 PM	60727
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Carbazole	8.2	0.56	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
4-Chloroaniline	ND	0.53	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
2-Chlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	6/23/2021 12:20:21 PM	60727
Di-n-octyl phthalate	6.5	3.1	20	J	µg/L	1	6/23/2021 12:20:21 PM	60727
Dibenzofuran	2.8	0.38	5.0	J	µg/L	1	6/23/2021 12:20:21 PM	60727
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Diethyl phthalate	ND	3.9	10		µg/L	1	6/23/2021 12:20:21 PM	60727
Dimethyl phthalate	ND	2.0	10		µg/L	1	6/23/2021 12:20:21 PM	60727
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
2,4-Dimethylphenol	7.8	0.97	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Hexachloroethane	ND	0.45	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Isophorone	ND	0.40	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
2-Methylphenol	1.2	0.51	5.0	J	µg/L	1	6/23/2021 12:20:21 PM	60727
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/15/2021 2:20:00 PM
Lab ID: 2106895-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
2-Nitroaniline	ND	0.31	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
3-Nitroaniline	ND	1.6	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
4-Nitroaniline	ND	0.47	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Nitrobenzene	ND	0.51	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
2-Nitrophenol	ND	0.47	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
4-Nitrophenol	ND	0.28	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Pentachlorophenol	ND	0.59	20		µg/L	1	6/23/2021 12:20:21 PM	60727
Phenol	29	0.33	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Pyridine	ND	0.93	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	6/23/2021 12:20:21 PM	60727
Surr: 2-Fluorophenol	59.1	0	15-88.8		%Rec	1	6/23/2021 12:20:21 PM	60727
Surr: Phenol-d5	48.2	0	15-71.9		%Rec	1	6/23/2021 12:20:21 PM	60727
Surr: 2,4,6-Tribromophenol	87.1	0	15-97.4		%Rec	1	6/23/2021 12:20:21 PM	60727
Surr: Nitrobenzene-d5	64.1	0	15-117		%Rec	1	6/23/2021 12:20:21 PM	60727
Surr: 2-Fluorobiphenyl	73.2	0	15-100		%Rec	1	6/23/2021 12:20:21 PM	60727
Surr: 4-Terphenyl-d14	100	0	15-120		%Rec	1	6/23/2021 12:20:21 PM	60727
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	210	1.7	5.0	D	µg/L	50	6/24/2021 1:00:00 AM	60740
1-Methylnaphthalene	59	1.2	5.0	D	µg/L	50	6/24/2021 1:00:00 AM	60740
2-Methylnaphthalene	85	1.7	5.0	D	µg/L	50	6/24/2021 1:00:00 AM	60740
Acenaphthylene	ND	0.043	0.10		µg/L	1	6/22/2021 12:23:00 PM	60740
Acenaphthene	0.84	0.031	0.10		µg/L	1	6/22/2021 12:23:00 PM	60740
Fluorene	1.3	0.031	0.10		µg/L	1	6/22/2021 12:23:00 PM	60740
Phenanthrene	1.0	0.057	0.10		µg/L	1	6/22/2021 12:23:00 PM	60740
Anthracene	0.32	0.034	0.10		µg/L	1	6/22/2021 12:23:00 PM	60740
Fluoranthene	ND	0.10	0.20		µg/L	1	6/22/2021 12:23:00 PM	60740
Pyrene	0.26	0.16	0.20		µg/L	1	6/22/2021 12:23:00 PM	60740
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	6/22/2021 12:23:00 PM	60740
Chrysene	ND	0.024	0.10		µg/L	1	6/22/2021 12:23:00 PM	60740
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	6/22/2021 12:23:00 PM	60740
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	6/22/2021 12:23:00 PM	60740
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	6/22/2021 12:23:00 PM	60740
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	6/22/2021 12:23:00 PM	60740
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	6/22/2021 12:23:00 PM	60740
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	6/22/2021 12:23:00 PM	60740
Surr: Nitrobenzene-d5	8.00	0	26.3-112	S	%Rec	1	6/22/2021 12:23:00 PM	60740
Surr: 2-Fluorobiphenyl	47.0	0	21.1-110		%Rec	1	6/22/2021 12:23:00 PM	60740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/15/2021 2:20:00 PM
Lab ID: 2106895-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	59.0	0	17.6-167		%Rec	1	6/22/2021 12:23:00 PM	60740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/15/2021 2:20:00 PM
Lab ID: 2106895-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.53	0.28	0.50		mg/L	5	6/17/2021 5:39:29 PM	R79172
Chloride	85	1.2	2.5		mg/L	5	6/17/2021 5:39:29 PM	R79172
Bromide	0.38	0.25	0.50	J	mg/L	5	6/17/2021 5:39:29 PM	R79172
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5	H	mg/L	5	6/17/2021 5:39:29 PM	R79172
Sulfate	ND	1.2	2.5		mg/L	5	6/17/2021 5:39:29 PM	R79172
Nitrate+Nitrite as N	ND	0.11	1.0		mg/L	5	7/2/2021 2:48:44 AM	A79541

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/15/2021 2:20:00 PM
Lab ID: 2106895-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.054	0.0074	0.020		mg/L	1	6/22/2021 1:09:47 PM	60803
Barium	4.5	0.016	0.030	*	mg/L	10	6/22/2021 1:11:05 PM	60803
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 1:09:47 PM	60803
Boron	0.36	0.0074	0.040		mg/L	1	6/22/2021 1:09:47 PM	60803
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 1:09:47 PM	60803
Calcium	86	0.11	1.0		mg/L	1	6/22/2021 1:09:47 PM	60803
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 1:09:47 PM	60803
Cobalt	ND	0.0024	0.0060		mg/L	1	6/22/2021 1:09:47 PM	60803
Copper	ND	0.0047	0.0060		mg/L	1	6/22/2021 1:09:47 PM	60803
Iron	6.8	0.13	0.50	*	mg/L	10	6/22/2021 1:11:05 PM	60803
Magnesium	17	0.067	1.0		mg/L	1	6/22/2021 1:09:47 PM	60803
Manganese	1.1	0.0081	0.020	*	mg/L	10	6/22/2021 1:11:05 PM	60803
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/22/2021 1:09:47 PM	60803
Nickel	0.027	0.0033	0.010		mg/L	1	6/22/2021 1:09:47 PM	60803
Potassium	0.72	0.16	1.0	J	mg/L	1	6/22/2021 1:09:47 PM	60803
Silver	ND	0.0013	0.0050		mg/L	1	6/22/2021 1:09:47 PM	60803
Sodium	300	1.9	10		mg/L	10	6/22/2021 1:11:05 PM	60803
Zinc	ND	0.0064	0.010		mg/L	1	6/22/2021 1:09:47 PM	60803
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/22/2021 3:03:10 PM	60803
Arsenic	0.0090	0.00013	0.0010		mg/L	1	6/22/2021 3:03:10 PM	60803
Lead	0.00012	0.000061	0.00050	J	mg/L	1	6/22/2021 3:03:10 PM	60803
Selenium	ND	0.00037	0.0010		mg/L	1	6/22/2021 3:03:10 PM	60803
Thallium	ND	0.00025	0.00025		mg/L	1	6/22/2021 3:03:10 PM	60803
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 12:44:02 PM	60773

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: OW-63
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/15/2021 2:20:00 PM
Lab ID: 2106895-001F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/18/2021 11:21:44 AM	A79194
Barium	4.2	0.011	0.020	*	mg/L	10	6/18/2021 11:23:06 AM	A79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 11:21:44 AM	A79194
Boron	0.32	0.0067	0.040		mg/L	1	6/18/2021 11:21:44 AM	A79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 11:21:44 AM	A79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 11:21:44 AM	A79194
Cobalt	ND	0.0024	0.0060		mg/L	1	6/18/2021 11:21:44 AM	A79194
Copper	ND	0.0035	0.0060		mg/L	1	6/18/2021 11:21:44 AM	A79194
Iron	6.3	0.10	0.20	*	mg/L	10	6/18/2021 11:23:06 AM	A79194
Manganese	1.0	0.0058	0.020	*	mg/L	10	6/18/2021 11:23:06 AM	A79194
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/18/2021 11:21:44 AM	A79194
Nickel	0.022	0.0033	0.010		mg/L	1	6/18/2021 11:21:44 AM	A79194
Silver	ND	0.0013	0.0050		mg/L	1	6/18/2021 11:21:44 AM	A79194
Zinc	ND	0.0060	0.010		mg/L	1	6/18/2021 11:21:44 AM	A79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/29/2021 4:05:37 PM	B79446
Arsenic	0.0082	0.00061	0.0050		mg/L	5	6/23/2021 4:31:16 PM	B79314
Lead	ND	0.00028	0.0025		mg/L	5	6/23/2021 4:31:16 PM	B79314
Selenium	ND	0.0017	0.0050		mg/L	5	6/23/2021 4:31:16 PM	B79314
Thallium	ND	0.0012	0.0012		mg/L	5	6/23/2021 4:31:16 PM	B79314
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 10:47:25 AM	61092

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB PFAS
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/15/2021 2:20:00 PM
Lab ID: 2106895-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.38	0.23	1.0	J	µg/L	1	6/18/2021 6:51:25 AM	R79176
Toluene	0.20	0.20	1.0	J	µg/L	1	6/18/2021 6:51:25 AM	R79176
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Naphthalene	ND	0.28	2.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Acetone	2.6	2.3	10	J	µg/L	1	6/18/2021 6:51:25 AM	R79176
Bromobenzene	ND	0.28	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Bromoform	ND	0.31	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Bromomethane	ND	1.6	3.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
2-Butanone	2.1	1.1	10	J	µg/L	1	6/18/2021 6:51:25 AM	R79176
Carbon disulfide	ND	0.44	10		µg/L	1	6/18/2021 6:51:25 AM	R79176
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Chloroethane	ND	0.38	2.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Chloroform	ND	0.13	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Chloromethane	ND	0.40	3.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Dibromomethane	ND	0.31	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB PFAS
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/15/2021 2:20:00 PM
Lab ID: 2106895-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
2-Hexanone	ND	1.8	10		µg/L	1	6/18/2021 6:51:25 AM	R79176
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/18/2021 6:51:25 AM	R79176
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Styrene	ND	0.13	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/18/2021 6:51:25 AM	R79176
Xylenes, Total	ND	0.55	1.5		µg/L	1	6/18/2021 6:51:25 AM	R79176
Surr: 1,2-Dichloroethane-d4	114	0	70-130		%Rec	1	6/18/2021 6:51:25 AM	R79176
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	6/18/2021 6:51:25 AM	R79176
Surr: Dibromofluoromethane	109	0	70-130		%Rec	1	6/18/2021 6:51:25 AM	R79176
Surr: Toluene-d8	104	0	70-130		%Rec	1	6/18/2021 6:51:25 AM	R79176
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.028	0.050		mg/L	1	6/18/2021 6:51:25 AM	G79176
Surr: 4-Bromofluorobenzene	97.0	0	70-130		%Rec	1	6/18/2021 6:51:25 AM	G79176

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 9:20:00 AM
Lab ID: 2106895-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Toluene	ND	0.20	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Naphthalene	ND	0.28	2.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Acetone	3.5	2.3	10	J	µg/L	1	6/18/2021 7:18:30 AM	R79176
Bromobenzene	ND	0.28	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Bromoform	ND	0.31	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Bromomethane	ND	1.6	3.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
2-Butanone	1.5	1.1	10	J	µg/L	1	6/18/2021 7:18:30 AM	R79176
Carbon disulfide	ND	0.44	10		µg/L	1	6/18/2021 7:18:30 AM	R79176
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Chloroethane	ND	0.38	2.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Chloroform	0.29	0.13	1.0	J	µg/L	1	6/18/2021 7:18:30 AM	R79176
Chloromethane	ND	0.40	3.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Dibromomethane	ND	0.31	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,1-Dichloroethane	0.53	0.27	1.0	J	µg/L	1	6/18/2021 7:18:30 AM	R79176
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 9:20:00 AM
Lab ID: 2106895-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
2-Hexanone	ND	1.8	10		µg/L	1	6/18/2021 7:18:30 AM	R79176
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/18/2021 7:18:30 AM	R79176
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Styrene	ND	0.13	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/18/2021 7:18:30 AM	R79176
Xylenes, Total	ND	0.55	1.5		µg/L	1	6/18/2021 7:18:30 AM	R79176
Surr: 1,2-Dichloroethane-d4	111	0	70-130		%Rec	1	6/18/2021 7:18:30 AM	R79176
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	6/18/2021 7:18:30 AM	R79176
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	6/18/2021 7:18:30 AM	R79176
Surr: Toluene-d8	102	0	70-130		%Rec	1	6/18/2021 7:18:30 AM	R79176
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.028	0.050		mg/L	1	6/18/2021 7:18:30 AM	G79176
Surr: 4-Bromofluorobenzene	99.5	0	70-130		%Rec	1	6/18/2021 7:18:30 AM	G79176

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 9:20:00 AM
Lab ID: 2106895-003B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	6/22/2021 10:59:54 PM	60808

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 9:20:00 AM
Lab ID: 2106895-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.043	0.016	0.064	J	mg/L	1	6/24/2021 4:09:21 AM	60766
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/24/2021 4:09:21 AM	60766
Surr: DNOP	91.1	0	15-142		%Rec	1	6/24/2021 4:09:21 AM	60766

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 9:20:00 AM
Lab ID: 2106895-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Azobenzene	ND	0.55	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Benzoic acid	ND	1.1	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Benzyl alcohol	ND	0.68	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Bis(2-ethylhexyl)phthalate	5.8	4.5	10	J	µg/L	1	6/23/2021 1:02:31 PM	60727
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Carbazole	ND	0.56	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
4-Chloroaniline	ND	0.53	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
2-Chlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	6/23/2021 1:02:31 PM	60727
Di-n-octyl phthalate	7.0	3.1	20	J	µg/L	1	6/23/2021 1:02:31 PM	60727
Dibenzofuran	ND	0.38	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Diethyl phthalate	ND	3.9	10		µg/L	1	6/23/2021 1:02:31 PM	60727
Dimethyl phthalate	ND	2.0	10		µg/L	1	6/23/2021 1:02:31 PM	60727
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Hexachloroethane	ND	0.45	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Isophorone	ND	0.40	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
2-Methylphenol	ND	0.51	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 9:20:00 AM
Lab ID: 2106895-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
2-Nitroaniline	ND	0.31	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
3-Nitroaniline	ND	1.6	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
4-Nitroaniline	ND	0.47	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Nitrobenzene	ND	0.51	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
2-Nitrophenol	ND	0.47	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
4-Nitrophenol	ND	0.28	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Pentachlorophenol	ND	0.59	20		µg/L	1	6/23/2021 1:02:31 PM	60727
Phenol	ND	0.33	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Pyridine	ND	0.93	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	6/23/2021 1:02:31 PM	60727
Surr: 2-Fluorophenol	54.2	0	15-88.8		%Rec	1	6/23/2021 1:02:31 PM	60727
Surr: Phenol-d5	45.9	0	15-71.9		%Rec	1	6/23/2021 1:02:31 PM	60727
Surr: 2,4,6-Tribromophenol	68.8	0	15-97.4		%Rec	1	6/23/2021 1:02:31 PM	60727
Surr: Nitrobenzene-d5	67.7	0	15-117		%Rec	1	6/23/2021 1:02:31 PM	60727
Surr: 2-Fluorobiphenyl	71.9	0	15-100		%Rec	1	6/23/2021 1:02:31 PM	60727
Surr: 4-Terphenyl-d14	108	0	15-120		%Rec	1	6/23/2021 1:02:31 PM	60727
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	0.26	0.034	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
Acenaphthylene	ND	0.043	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
Acenaphthene	ND	0.031	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
Fluorene	ND	0.031	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
Phenanthrene	ND	0.057	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
Anthracene	ND	0.034	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
Fluoranthene	ND	0.10	0.20		µg/L	1	6/22/2021 1:07:00 PM	60740
Pyrene	ND	0.16	0.20		µg/L	1	6/22/2021 1:07:00 PM	60740
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
Chrysene	ND	0.024	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	6/22/2021 1:07:00 PM	60740
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	6/22/2021 1:07:00 PM	60740
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	6/22/2021 1:07:00 PM	60740
Surr: Nitrobenzene-d5	55.0	0	26.3-112		%Rec	1	6/22/2021 1:07:00 PM	60740
Surr: 2-Fluorobiphenyl	45.5	0	21.1-110		%Rec	1	6/22/2021 1:07:00 PM	60740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 9:20:00 AM
Lab ID: 2106895-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	56.5	0	17.6-167		%Rec	1	6/22/2021 1:07:00 PM	60740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 9:20:00 AM
Lab ID: 2106895-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.42	0.28	0.50	J	mg/L	5	6/17/2021 6:04:12 PM	R79172
Chloride	340	5.0	10	*	mg/L	20	6/17/2021 6:16:33 PM	R79172
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/17/2021 6:04:12 PM	R79172
Bromide	0.28	0.25	0.50	J	mg/L	5	6/17/2021 6:04:12 PM	R79172
Nitrogen, Nitrate (As N)	2.1	0.10	0.50		mg/L	5	6/17/2021 6:04:12 PM	R79172
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/17/2021 6:04:12 PM	R79172
Sulfate	490	5.0	10	*	mg/L	20	6/17/2021 6:16:33 PM	R79172

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 9:20:00 AM
Lab ID: 2106895-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.98	0.074	0.20	*	mg/L	10	6/22/2021 1:14:05 PM	60803
Barium	0.051	0.0016	0.0030		mg/L	1	6/22/2021 1:12:27 PM	60803
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 1:12:27 PM	60803
Boron	0.19	0.0074	0.040		mg/L	1	6/22/2021 1:12:27 PM	60803
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 1:12:27 PM	60803
Calcium	210	1.1	10		mg/L	10	6/22/2021 1:14:05 PM	60803
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 1:12:27 PM	60803
Cobalt	0.0041	0.0024	0.0060	J	mg/L	1	6/22/2021 1:12:27 PM	60803
Copper	ND	0.0047	0.0060		mg/L	1	6/22/2021 1:12:27 PM	60803
Iron	0.55	0.013	0.050	*	mg/L	1	6/22/2021 1:12:27 PM	60803
Magnesium	47	0.067	1.0		mg/L	1	6/22/2021 1:12:27 PM	60803
Manganese	0.66	0.00081	0.0020	*	mg/L	1	6/22/2021 1:12:27 PM	60803
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/22/2021 1:12:27 PM	60803
Nickel	ND	0.0033	0.010		mg/L	1	6/22/2021 1:12:27 PM	60803
Potassium	2.1	0.16	1.0		mg/L	1	6/22/2021 1:12:27 PM	60803
Silver	ND	0.0013	0.0050		mg/L	1	6/22/2021 1:12:27 PM	60803
Sodium	220	1.9	10		mg/L	10	6/22/2021 1:14:05 PM	60803
Zinc	ND	0.0064	0.010		mg/L	1	6/22/2021 1:12:27 PM	60803
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/22/2021 3:10:26 PM	60803
Arsenic	0.0012	0.00013	0.0010		mg/L	1	6/22/2021 3:10:26 PM	60803
Lead	0.00064	0.00031	0.0025	J	mg/L	5	6/22/2021 4:48:11 PM	60803
Selenium	0.00041	0.00037	0.0010	J	mg/L	1	6/22/2021 3:10:26 PM	60803
Thallium	ND	0.0012	0.0012		mg/L	5	6/22/2021 4:48:11 PM	60803
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 1:54:36 PM	60773

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-46
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 9:20:00 AM
Lab ID: 2106895-003G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/18/2021 11:29:31 AM	A79194
Barium	0.026	0.0011	0.0020		mg/L	1	6/18/2021 11:29:31 AM	A79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 11:29:31 AM	A79194
Boron	0.17	0.0067	0.040		mg/L	1	6/18/2021 11:29:31 AM	A79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 11:29:31 AM	A79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 11:29:31 AM	A79194
Cobalt	0.0026	0.0024	0.0060	J	mg/L	1	6/18/2021 11:29:31 AM	A79194
Copper	ND	0.0035	0.0060		mg/L	1	6/18/2021 11:29:31 AM	A79194
Iron	ND	0.010	0.020		mg/L	1	6/18/2021 11:29:31 AM	A79194
Manganese	0.42	0.00058	0.0020	*	mg/L	1	6/18/2021 11:29:31 AM	A79194
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/18/2021 11:29:31 AM	A79194
Nickel	ND	0.0033	0.010		mg/L	1	6/18/2021 11:29:31 AM	A79194
Silver	ND	0.0013	0.0050		mg/L	1	6/18/2021 11:29:31 AM	A79194
Zinc	0.0078	0.0060	0.010	J	mg/L	1	6/18/2021 11:29:31 AM	A79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/29/2021 4:10:21 PM	B79446
Arsenic	0.00087	0.00061	0.0050	J	mg/L	5	6/23/2021 4:36:00 PM	B79314
Lead	ND	0.00028	0.0025		mg/L	5	6/23/2021 4:36:00 PM	B79314
Selenium	ND	0.0017	0.0050		mg/L	5	6/23/2021 4:36:00 PM	B79314
Thallium	ND	0.0012	0.0012		mg/L	5	6/23/2021 4:36:00 PM	B79314
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 10:49:51 AM	61092

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Toluene	ND	0.20	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Methyl tert-butyl ether (MTBE)	1.2	0.39	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Naphthalene	ND	0.28	2.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Acetone	3.0	2.3	10	J	µg/L	1	6/18/2021 7:45:38 AM	R79176
Bromobenzene	ND	0.28	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Bromoform	ND	0.31	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Bromomethane	ND	1.6	3.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
2-Butanone	ND	1.1	10		µg/L	1	6/18/2021 7:45:38 AM	R79176
Carbon disulfide	ND	0.44	10		µg/L	1	6/18/2021 7:45:38 AM	R79176
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Chloroethane	ND	0.38	2.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Chloroform	ND	0.13	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Chloromethane	ND	0.40	3.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Dibromomethane	ND	0.31	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
2-Hexanone	ND	1.8	10		µg/L	1	6/18/2021 7:45:38 AM	R79176
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/18/2021 7:45:38 AM	R79176
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Styrene	ND	0.13	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/18/2021 7:45:38 AM	R79176
Xylenes, Total	ND	0.55	1.5		µg/L	1	6/18/2021 7:45:38 AM	R79176
Surr: 1,2-Dichloroethane-d4	113	0	70-130		%Rec	1	6/18/2021 7:45:38 AM	R79176
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	6/18/2021 7:45:38 AM	R79176
Surr: Dibromofluoromethane	107	0	70-130		%Rec	1	6/18/2021 7:45:38 AM	R79176
Surr: Toluene-d8	102	0	70-130		%Rec	1	6/18/2021 7:45:38 AM	R79176
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.028	0.050		mg/L	1	6/18/2021 7:45:38 AM	G79176
Surr: 4-Bromofluorobenzene	98.7	0	70-130		%Rec	1	6/18/2021 7:45:38 AM	G79176

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-004B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.12	0.016	0.064		mg/L	1	6/24/2021 4:33:39 AM	60766
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/24/2021 4:33:39 AM	60766
Surr: DNOP	89.0	0	15-142		%Rec	1	6/24/2021 4:33:39 AM	60766

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Azobenzene	ND	0.55	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Benzoic acid	ND	1.1	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Benzyl alcohol	ND	0.68	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Bis(2-ethylhexyl)phthalate	5.8	4.5	10	J	µg/L	1	6/23/2021 1:44:44 PM	60727
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Carbazole	ND	0.56	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
4-Chloroaniline	ND	0.53	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
2-Chlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	6/23/2021 1:44:44 PM	60727
Di-n-octyl phthalate	6.5	3.1	20	J	µg/L	1	6/23/2021 1:44:44 PM	60727
Dibenzofuran	ND	0.38	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Diethyl phthalate	ND	3.9	10		µg/L	1	6/23/2021 1:44:44 PM	60727
Dimethyl phthalate	ND	2.0	10		µg/L	1	6/23/2021 1:44:44 PM	60727
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Hexachloroethane	ND	0.45	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Isophorone	ND	0.40	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
2-Methylphenol	ND	0.51	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
2-Nitroaniline	ND	0.31	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
3-Nitroaniline	ND	1.6	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
4-Nitroaniline	ND	0.47	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Nitrobenzene	ND	0.51	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
2-Nitrophenol	ND	0.47	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
4-Nitrophenol	ND	0.28	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Pentachlorophenol	ND	0.59	20		µg/L	1	6/23/2021 1:44:44 PM	60727
Phenol	ND	0.33	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Pyridine	ND	0.93	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	6/23/2021 1:44:44 PM	60727
Surr: 2-Fluorophenol	55.8	0	15-88.8		%Rec	1	6/23/2021 1:44:44 PM	60727
Surr: Phenol-d5	45.2	0	15-71.9		%Rec	1	6/23/2021 1:44:44 PM	60727
Surr: 2,4,6-Tribromophenol	84.9	0	15-97.4		%Rec	1	6/23/2021 1:44:44 PM	60727
Surr: Nitrobenzene-d5	65.2	0	15-117		%Rec	1	6/23/2021 1:44:44 PM	60727
Surr: 2-Fluorobiphenyl	67.2	0	15-100		%Rec	1	6/23/2021 1:44:44 PM	60727
Surr: 4-Terphenyl-d14	105	0	15-120		%Rec	1	6/23/2021 1:44:44 PM	60727
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	0.18	0.034	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
Acenaphthylene	ND	0.043	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
Acenaphthene	ND	0.031	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
Fluorene	ND	0.031	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
Phenanthrene	ND	0.057	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
Anthracene	ND	0.034	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
Fluoranthene	ND	0.10	0.20		µg/L	1	6/22/2021 1:51:00 PM	60740
Pyrene	ND	0.16	0.20		µg/L	1	6/22/2021 1:51:00 PM	60740
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
Chrysene	ND	0.024	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	6/22/2021 1:51:00 PM	60740
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	6/22/2021 1:51:00 PM	60740
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	6/22/2021 1:51:00 PM	60740
Surr: Nitrobenzene-d5	64.5	0	26.3-112		%Rec	1	6/22/2021 1:51:00 PM	60740
Surr: 2-Fluorobiphenyl	52.0	0	21.1-110		%Rec	1	6/22/2021 1:51:00 PM	60740

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Qualifiers:

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PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	58.5	0	17.6-167		%Rec	1	6/22/2021 1:51:00 PM	60740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.93	0.28	0.50		mg/L	5	6/17/2021 6:28:55 PM	R79172
Chloride	650	12	25	*	mg/L	50	6/29/2021 1:59:09 AM	A79426
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/17/2021 6:28:55 PM	R79172
Bromide	2.4	0.25	0.50		mg/L	5	6/17/2021 6:28:55 PM	R79172
Nitrogen, Nitrate (As N)	0.22	0.10	0.50	J	mg/L	5	6/17/2021 6:28:55 PM	R79172
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/17/2021 6:28:55 PM	R79172
Sulfate	140	1.2	2.5		mg/L	5	6/17/2021 6:28:55 PM	R79172

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	2.8	0.037	0.10	*	mg/L	5	6/22/2021 1:47:46 PM	60803
Barium	0.084	0.0016	0.0030		mg/L	1	6/22/2021 1:15:39 PM	60803
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 1:15:39 PM	60803
Boron	1.5	0.037	0.20		mg/L	5	6/22/2021 1:47:46 PM	60803
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 1:15:39 PM	60803
Calcium	59	0.57	5.0		mg/L	5	6/22/2021 1:47:46 PM	60803
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 1:15:39 PM	60803
Cobalt	0.0028	0.0024	0.0060	J	mg/L	1	6/22/2021 1:15:39 PM	60803
Copper	ND	0.0047	0.0060		mg/L	1	6/22/2021 1:15:39 PM	60803
Iron	1.6	0.064	0.25	*	mg/L	5	6/22/2021 1:47:46 PM	60803
Magnesium	12	0.067	1.0		mg/L	1	6/22/2021 1:15:39 PM	60803
Manganese	0.11	0.00081	0.0020	*	mg/L	1	6/22/2021 1:15:39 PM	60803
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/22/2021 1:15:39 PM	60803
Nickel	0.0052	0.0033	0.010	J	mg/L	1	6/22/2021 1:15:39 PM	60803
Potassium	2.7	0.16	1.0		mg/L	1	6/22/2021 1:15:39 PM	60803
Silver	ND	0.0013	0.0050		mg/L	1	6/22/2021 1:15:39 PM	60803
Sodium	680	1.9	10		mg/L	10	6/22/2021 1:17:00 PM	60803
Zinc	0.013	0.0064	0.010		mg/L	1	6/22/2021 1:15:39 PM	60803
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/22/2021 3:15:16 PM	60803
Arsenic	0.0015	0.00013	0.0010		mg/L	1	6/22/2021 3:15:16 PM	60803
Lead	0.0017	0.00031	0.0025	J	mg/L	5	6/22/2021 4:53:01 PM	60803
Selenium	0.00085	0.00037	0.0010	J	mg/L	1	6/22/2021 3:15:16 PM	60803
Thallium	ND	0.0012	0.0012		mg/L	5	6/22/2021 4:53:01 PM	60803
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 1:57:00 PM	60773

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.27	0.0056	0.020	*	mg/L	1	6/18/2021 11:32:41 AM	A79194
Barium	0.059	0.0011	0.0020		mg/L	1	6/18/2021 11:32:41 AM	A79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 11:32:41 AM	A79194
Boron	1.5	0.067	0.40		mg/L	10	6/18/2021 11:34:17 AM	A79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 11:32:41 AM	A79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 11:32:41 AM	A79194
Cobalt	ND	0.0024	0.0060		mg/L	1	6/18/2021 11:32:41 AM	A79194
Copper	ND	0.0035	0.0060		mg/L	1	6/18/2021 11:32:41 AM	A79194
Iron	0.11	0.010	0.020		mg/L	1	6/18/2021 11:32:41 AM	A79194
Manganese	0.018	0.00058	0.0020		mg/L	1	6/18/2021 11:32:41 AM	A79194
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/18/2021 11:32:41 AM	A79194
Nickel	0.0041	0.0033	0.010	J	mg/L	1	6/18/2021 11:32:41 AM	A79194
Silver	ND	0.0013	0.0050		mg/L	1	6/18/2021 11:32:41 AM	A79194
Zinc	0.015	0.0060	0.010		mg/L	1	6/18/2021 11:32:41 AM	A79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/29/2021 4:15:04 PM	B79446
Arsenic	0.00093	0.00061	0.0050	J	mg/L	5	6/23/2021 4:40:45 PM	B79314
Lead	0.00035	0.00028	0.0025	J	mg/L	5	6/23/2021 4:40:45 PM	B79314
Selenium	ND	0.0017	0.0050		mg/L	5	6/23/2021 4:40:45 PM	B79314
Thallium	ND	0.0012	0.0012		mg/L	5	6/23/2021 4:40:45 PM	B79314
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 10:52:14 AM	61092

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Toluene	0.23	0.20	1.0	J	µg/L	1	6/18/2021 8:12:44 AM	R79176
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Naphthalene	ND	0.28	2.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Acetone	2.4	2.3	10	J	µg/L	1	6/18/2021 8:12:44 AM	R79176
Bromobenzene	ND	0.28	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Bromoform	ND	0.31	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Bromomethane	ND	1.6	3.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
2-Butanone	2.2	1.1	10	J	µg/L	1	6/18/2021 8:12:44 AM	R79176
Carbon disulfide	ND	0.44	10		µg/L	1	6/18/2021 8:12:44 AM	R79176
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Chloroethane	ND	0.38	2.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Chloroform	ND	0.13	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Chloromethane	ND	0.40	3.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Dibromomethane	ND	0.31	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
2-Hexanone	ND	1.8	10		µg/L	1	6/18/2021 8:12:44 AM	R79176
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/18/2021 8:12:44 AM	R79176
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Styrene	ND	0.13	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/18/2021 8:12:44 AM	R79176
Xylenes, Total	ND	0.55	1.5		µg/L	1	6/18/2021 8:12:44 AM	R79176
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%Rec	1	6/18/2021 8:12:44 AM	R79176
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	6/18/2021 8:12:44 AM	R79176
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	6/18/2021 8:12:44 AM	R79176
Surr: Toluene-d8	104	0	70-130		%Rec	1	6/18/2021 8:12:44 AM	R79176
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.028	0.050		mg/L	1	6/18/2021 8:12:44 AM	G79176
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	6/18/2021 8:12:44 AM	G79176

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:50:00 AM
Lab ID: 2106895-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Toluene	ND	0.20	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Methyl tert-butyl ether (MTBE)	7.5	0.39	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,2-Dichloroethane (EDC)	0.50	0.22	1.0	J	µg/L	1	6/18/2021 12:36:55 PM	R79222
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Naphthalene	ND	0.28	2.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Acetone	5.4	2.3	10	J	µg/L	1	6/18/2021 12:36:55 PM	R79222
Bromobenzene	ND	0.28	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Bromoform	ND	0.31	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Bromomethane	ND	1.6	3.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
2-Butanone	1.9	1.1	10	J	µg/L	1	6/18/2021 12:36:55 PM	R79222
Carbon disulfide	ND	0.44	10		µg/L	1	6/18/2021 12:36:55 PM	R79222
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Chloroethane	ND	0.38	2.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Chloroform	ND	0.13	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Chloromethane	ND	0.40	3.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Dibromomethane	ND	0.31	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,1-Dichloroethane	1.2	0.27	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:50:00 AM
Lab ID: 2106895-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
2-Hexanone	ND	1.8	10		µg/L	1	6/18/2021 12:36:55 PM	R79222
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/18/2021 12:36:55 PM	R79222
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Styrene	ND	0.13	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/18/2021 12:36:55 PM	R79222
Xylenes, Total	ND	0.55	1.5		µg/L	1	6/18/2021 12:36:55 PM	R79222
Surr: 1,2-Dichloroethane-d4	113	0	70-130		%Rec	1	6/18/2021 12:36:55 PM	R79222
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	6/18/2021 12:36:55 PM	R79222
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	6/18/2021 12:36:55 PM	R79222
Surr: Toluene-d8	103	0	70-130		%Rec	1	6/18/2021 12:36:55 PM	R79222
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.029	0.028	0.050	J	mg/L	1	6/18/2021 12:36:55 PM	G79222
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	6/18/2021 12:36:55 PM	G79222

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:50:00 AM
Lab ID: 2106895-006B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	6/22/2021 11:30:34 PM	60808

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:50:00 AM
Lab ID: 2106895-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.13	0.016	0.064		mg/L	1	6/24/2021 4:57:55 AM	60766
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/24/2021 4:57:55 AM	60766
Surr: DNOP	87.5	0	15-142		%Rec	1	6/24/2021 4:57:55 AM	60766

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:50:00 AM
Lab ID: 2106895-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Azobenzene	ND	0.55	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Benzoic acid	ND	1.1	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Benzyl alcohol	ND	0.68	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Bis(2-ethylhexyl)phthalate	5.3	4.5	10	J	µg/L	1	6/23/2021 2:27:08 PM	60727
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Carbazole	ND	0.56	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
4-Chloroaniline	ND	0.53	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
2-Chlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	6/23/2021 2:27:08 PM	60727
Di-n-octyl phthalate	6.5	3.1	20	J	µg/L	1	6/23/2021 2:27:08 PM	60727
Dibenzofuran	ND	0.38	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Diethyl phthalate	ND	3.9	10		µg/L	1	6/23/2021 2:27:08 PM	60727
Dimethyl phthalate	ND	2.0	10		µg/L	1	6/23/2021 2:27:08 PM	60727
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Hexachloroethane	ND	0.45	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Isophorone	ND	0.40	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
2-Methylphenol	ND	0.51	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:50:00 AM
Lab ID: 2106895-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
2-Nitroaniline	ND	0.31	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
3-Nitroaniline	ND	1.6	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
4-Nitroaniline	ND	0.47	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Nitrobenzene	ND	0.51	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
2-Nitrophenol	ND	0.47	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
4-Nitrophenol	ND	0.28	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Pentachlorophenol	ND	0.59	20		µg/L	1	6/23/2021 2:27:08 PM	60727
Phenol	ND	0.33	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Pyridine	ND	0.93	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	6/23/2021 2:27:08 PM	60727
Surr: 2-Fluorophenol	55.6	0	15-88.8		%Rec	1	6/23/2021 2:27:08 PM	60727
Surr: Phenol-d5	49.5	0	15-71.9		%Rec	1	6/23/2021 2:27:08 PM	60727
Surr: 2,4,6-Tribromophenol	77.7	0	15-97.4		%Rec	1	6/23/2021 2:27:08 PM	60727
Surr: Nitrobenzene-d5	65.0	0	15-117		%Rec	1	6/23/2021 2:27:08 PM	60727
Surr: 2-Fluorobiphenyl	73.7	0	15-100		%Rec	1	6/23/2021 2:27:08 PM	60727
Surr: 4-Terphenyl-d14	98.1	0	15-120		%Rec	1	6/23/2021 2:27:08 PM	60727
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
Acenaphthylene	ND	0.043	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
Acenaphthene	ND	0.031	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
Fluorene	ND	0.031	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
Phenanthrene	ND	0.057	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
Anthracene	ND	0.034	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
Fluoranthene	ND	0.10	0.20		µg/L	1	6/22/2021 2:34:00 PM	60740
Pyrene	ND	0.16	0.20		µg/L	1	6/22/2021 2:34:00 PM	60740
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
Chrysene	ND	0.024	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	6/22/2021 2:34:00 PM	60740
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	6/22/2021 2:34:00 PM	60740
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	6/22/2021 2:34:00 PM	60740
Surr: Nitrobenzene-d5	56.5	0	26.3-112		%Rec	1	6/22/2021 2:34:00 PM	60740
Surr: 2-Fluorobiphenyl	50.0	0	21.1-110		%Rec	1	6/22/2021 2:34:00 PM	60740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:50:00 AM
Lab ID: 2106895-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	58.0	0	17.6-167		%Rec	1	6/22/2021 2:34:00 PM	60740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:50:00 AM
Lab ID: 2106895-006E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	1.3	0.28	0.50		mg/L	5	6/17/2021 7:18:19 PM	R79172
Chloride	2400	50	100	*	mg/L	200	6/29/2021 2:12:02 AM	A79426
Nitrogen, Nitrite (As N)	ND	0.29	2.0		mg/L	20	6/17/2021 7:30:40 PM	R79172
Bromide	1.6	0.25	0.50		mg/L	5	6/17/2021 7:18:19 PM	R79172
Nitrogen, Nitrate (As N)	0.96	0.10	0.50		mg/L	5	6/17/2021 7:18:19 PM	R79172
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/17/2021 7:18:19 PM	R79172
Sulfate	220	1.2	2.5		mg/L	5	6/17/2021 7:18:19 PM	R79172

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:50:00 AM
Lab ID: 2106895-006F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	1.1	0.037	0.10	*	mg/L	5	6/22/2021 1:26:26 PM	60803
Barium	0.053	0.0016	0.0030		mg/L	1	6/22/2021 1:24:47 PM	60803
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 1:24:47 PM	60803
Boron	0.49	0.0074	0.040		mg/L	1	6/22/2021 1:24:47 PM	60803
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 1:24:47 PM	60803
Calcium	180	0.57	5.0		mg/L	5	6/22/2021 1:26:26 PM	60803
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 1:24:47 PM	60803
Cobalt	0.0045	0.0024	0.0060	J	mg/L	1	6/22/2021 1:24:47 PM	60803
Copper	0.0049	0.0047	0.0060	J	mg/L	1	6/22/2021 1:24:47 PM	60803
Iron	0.55	0.013	0.050	*	mg/L	1	6/22/2021 1:24:47 PM	60803
Magnesium	32	0.067	1.0		mg/L	1	6/22/2021 1:24:47 PM	60803
Manganese	0.049	0.00081	0.0020		mg/L	1	6/22/2021 1:24:47 PM	60803
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/22/2021 1:24:47 PM	60803
Nickel	0.029	0.0033	0.010		mg/L	1	6/22/2021 1:24:47 PM	60803
Potassium	10	0.16	1.0		mg/L	1	6/22/2021 1:24:47 PM	60803
Silver	ND	0.0013	0.0050		mg/L	1	6/22/2021 1:24:47 PM	60803
Sodium	1800	9.3	50		mg/L	50	6/22/2021 1:28:00 PM	60803
Zinc	ND	0.0064	0.010		mg/L	1	6/22/2021 1:24:47 PM	60803
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/28/2021 12:41:05 PM	60803
Arsenic	ND	0.00063	0.0050		mg/L	5	6/22/2021 4:55:27 PM	60803
Lead	0.00046	0.00031	0.0025	J	mg/L	5	6/22/2021 4:55:27 PM	60803
Selenium	ND	0.0019	0.0050		mg/L	5	6/22/2021 4:55:27 PM	60803
Thallium	ND	0.0012	0.0012		mg/L	5	6/22/2021 4:55:27 PM	60803
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 1:59:24 PM	60773

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:50:00 AM
Lab ID: 2106895-006G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/18/2021 11:35:51 AM	A79194
Barium	0.046	0.0011	0.0020		mg/L	1	6/18/2021 11:35:51 AM	A79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 11:35:51 AM	A79194
Boron	0.47	0.0067	0.040		mg/L	1	6/18/2021 11:35:51 AM	A79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 11:35:51 AM	A79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 11:35:51 AM	A79194
Cobalt	0.0048	0.0024	0.0060	J	mg/L	1	6/18/2021 11:35:51 AM	A79194
Copper	0.0041	0.0035	0.0060	J	mg/L	1	6/18/2021 11:35:51 AM	A79194
Iron	ND	0.010	0.020		mg/L	1	6/18/2021 11:35:51 AM	A79194
Manganese	0.0092	0.00058	0.0020		mg/L	1	6/18/2021 11:35:51 AM	A79194
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/18/2021 11:35:51 AM	A79194
Nickel	0.028	0.0033	0.010		mg/L	1	6/18/2021 11:35:51 AM	A79194
Silver	ND	0.0013	0.0050		mg/L	1	6/18/2021 11:35:51 AM	A79194
Zinc	0.0064	0.0060	0.010	J	mg/L	1	6/18/2021 11:35:51 AM	A79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/23/2021 4:55:01 PM	B79314
Arsenic	0.00064	0.00061	0.0050	J	mg/L	5	6/23/2021 4:55:01 PM	B79314
Lead	ND	0.00028	0.0025		mg/L	5	6/23/2021 4:55:01 PM	B79314
Selenium	ND	0.0017	0.0050		mg/L	5	6/23/2021 4:55:01 PM	B79314
Thallium	ND	0.0012	0.0012		mg/L	5	6/23/2021 4:55:01 PM	B79314
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 10:54:38 AM	61092

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Toluene	0.37	0.20	1.0	J	µg/L	1	6/18/2021 2:54:05 PM	R79222
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Naphthalene	ND	0.28	2.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Acetone	2.6	2.3	10	J	µg/L	1	6/18/2021 2:54:05 PM	R79222
Bromobenzene	ND	0.28	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Bromodichloromethane	0.23	0.20	1.0	J	µg/L	1	6/18/2021 2:54:05 PM	R79222
Bromoform	ND	0.31	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Bromomethane	ND	1.6	3.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
2-Butanone	1.4	1.1	10	J	µg/L	1	6/18/2021 2:54:05 PM	R79222
Carbon disulfide	ND	0.44	10		µg/L	1	6/18/2021 2:54:05 PM	R79222
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Chlorobenzene	0.30	0.14	1.0	J	µg/L	1	6/18/2021 2:54:05 PM	R79222
Chloroethane	ND	0.38	2.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Chloroform	ND	0.13	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Chloromethane	ND	0.40	3.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Dibromomethane	ND	0.31	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
2-Hexanone	ND	1.8	10		µg/L	1	6/18/2021 2:54:05 PM	R79222
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/18/2021 2:54:05 PM	R79222
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Styrene	ND	0.13	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/18/2021 2:54:05 PM	R79222
Xylenes, Total	ND	0.55	1.5		µg/L	1	6/18/2021 2:54:05 PM	R79222
Surr: 1,2-Dichloroethane-d4	118	0	70-130		%Rec	1	6/18/2021 2:54:05 PM	R79222
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	6/18/2021 2:54:05 PM	R79222
Surr: Dibromofluoromethane	114	0	70-130		%Rec	1	6/18/2021 2:54:05 PM	R79222
Surr: Toluene-d8	113	0	70-130		%Rec	1	6/18/2021 2:54:05 PM	R79222
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.033	0.028	0.050	J	mg/L	1	6/18/2021 2:54:05 PM	G79222
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	6/18/2021 2:54:05 PM	G79222

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-007B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.025	0.016	0.064	J	mg/L	1	6/24/2021 5:21:57 AM	60766
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/24/2021 5:21:57 AM	60766
Surr: DNOP	88.3	0	15-142		%Rec	1	6/24/2021 5:21:57 AM	60766

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Qualifiers:

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Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Azobenzene	ND	0.55	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Benzoic acid	ND	1.1	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Benzyl alcohol	ND	0.68	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Bis(2-ethylhexyl)phthalate	5.3	4.5	10	J	µg/L	1	6/23/2021 3:09:32 PM	60727
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Carbazole	ND	0.56	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
4-Chloroaniline	ND	0.53	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
2-Chlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Di-n-butyl phthalate	6.7	6.5	10	J	µg/L	1	6/23/2021 3:09:32 PM	60727
Di-n-octyl phthalate	6.6	3.1	20	J	µg/L	1	6/23/2021 3:09:32 PM	60727
Dibenzofuran	ND	0.38	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Diethyl phthalate	ND	3.9	10		µg/L	1	6/23/2021 3:09:32 PM	60727
Dimethyl phthalate	ND	2.0	10		µg/L	1	6/23/2021 3:09:32 PM	60727
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Hexachloroethane	ND	0.45	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Isophorone	ND	0.40	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
2-Methylphenol	ND	0.51	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727

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Qualifiers:

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J	Analyte detected below quantitation limits
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P	Sample pH Not In Range
PQL	Practical Quanitative Limit
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S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
2-Nitroaniline	ND	0.31	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
3-Nitroaniline	ND	1.6	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
4-Nitroaniline	ND	0.47	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Nitrobenzene	ND	0.51	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
2-Nitrophenol	ND	0.47	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
4-Nitrophenol	ND	0.28	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Pentachlorophenol	ND	0.59	20		µg/L	1	6/23/2021 3:09:32 PM	60727
Phenol	ND	0.33	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Pyridine	ND	0.93	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	6/23/2021 3:09:32 PM	60727
Surr: 2-Fluorophenol	57.8	0	15-88.8		%Rec	1	6/23/2021 3:09:32 PM	60727
Surr: Phenol-d5	46.3	0	15-71.9		%Rec	1	6/23/2021 3:09:32 PM	60727
Surr: 2,4,6-Tribromophenol	83.7	0	15-97.4		%Rec	1	6/23/2021 3:09:32 PM	60727
Surr: Nitrobenzene-d5	67.9	0	15-117		%Rec	1	6/23/2021 3:09:32 PM	60727
Surr: 2-Fluorobiphenyl	66.9	0	15-100		%Rec	1	6/23/2021 3:09:32 PM	60727
Surr: 4-Terphenyl-d14	107	0	15-120		%Rec	1	6/23/2021 3:09:32 PM	60727
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	0.18	0.034	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
Acenaphthylene	ND	0.043	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
Acenaphthene	ND	0.031	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
Fluorene	ND	0.031	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
Phenanthrene	ND	0.057	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
Anthracene	ND	0.034	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
Fluoranthene	ND	0.10	0.20		µg/L	1	6/22/2021 3:18:00 PM	60740
Pyrene	ND	0.16	0.20		µg/L	1	6/22/2021 3:18:00 PM	60740
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
Chrysene	ND	0.024	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	6/22/2021 3:18:00 PM	60740
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	6/22/2021 3:18:00 PM	60740
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	6/22/2021 3:18:00 PM	60740
Surr: Nitrobenzene-d5	52.0	0	26.3-112		%Rec	1	6/22/2021 3:18:00 PM	60740
Surr: 2-Fluorobiphenyl	46.5	0	21.1-110		%Rec	1	6/22/2021 3:18:00 PM	60740

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Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	51.5	0	17.6-167		%Rec	1	6/22/2021 3:18:00 PM	60740

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Qualifiers:

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Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.056	0.10		mg/L	1	6/17/2021 7:43:01 PM	R79172
Chloride	0.46	0.25	0.50	J	mg/L	1	6/17/2021 7:43:01 PM	R79172
Nitrogen, Nitrite (As N)	ND	0.015	0.10		mg/L	1	6/17/2021 7:43:01 PM	R79172
Bromide	ND	0.050	0.10		mg/L	1	6/17/2021 7:43:01 PM	R79172
Nitrogen, Nitrate (As N)	ND	0.020	0.10		mg/L	1	6/17/2021 7:43:01 PM	R79172
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	6/17/2021 7:43:01 PM	R79172
Sulfate	ND	0.25	0.50		mg/L	1	6/17/2021 7:43:01 PM	R79172

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Qualifiers:

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Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-007E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	ND	0.0074	0.020		mg/L	1	6/22/2021 1:29:34 PM	60803
Barium	ND	0.0016	0.0030		mg/L	1	6/22/2021 1:29:34 PM	60803
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 1:29:34 PM	60803
Boron	ND	0.0074	0.040		mg/L	1	6/22/2021 1:29:34 PM	60803
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 1:29:34 PM	60803
Calcium	ND	0.11	1.0		mg/L	1	6/22/2021 1:29:34 PM	60803
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 1:29:34 PM	60803
Cobalt	ND	0.0024	0.0060		mg/L	1	6/22/2021 1:29:34 PM	60803
Copper	ND	0.0047	0.0060		mg/L	1	6/22/2021 1:29:34 PM	60803
Iron	ND	0.013	0.050		mg/L	1	6/22/2021 1:29:34 PM	60803
Magnesium	ND	0.067	1.0		mg/L	1	6/22/2021 1:29:34 PM	60803
Manganese	ND	0.00081	0.0020		mg/L	1	6/22/2021 1:29:34 PM	60803
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/22/2021 1:29:34 PM	60803
Nickel	ND	0.0033	0.010		mg/L	1	6/22/2021 1:29:34 PM	60803
Potassium	ND	0.16	1.0		mg/L	1	6/22/2021 1:29:34 PM	60803
Silver	ND	0.0013	0.0050		mg/L	1	6/22/2021 1:29:34 PM	60803
Sodium	0.41	0.19	1.0	J	mg/L	1	6/22/2021 1:29:34 PM	60803
Zinc	ND	0.0064	0.010		mg/L	1	6/22/2021 1:29:34 PM	60803
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/22/2021 3:32:13 PM	60803
Arsenic	ND	0.00013	0.0010		mg/L	1	6/22/2021 3:32:13 PM	60803
Lead	ND	0.000061	0.00050		mg/L	1	6/22/2021 3:32:13 PM	60803
Selenium	ND	0.00037	0.0010		mg/L	1	6/22/2021 3:32:13 PM	60803
Thallium	ND	0.00025	0.00025		mg/L	1	6/22/2021 3:32:13 PM	60803
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 2:01:48 PM	60773

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 10:25:00 AM
Lab ID: 2106895-007F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/18/2021 11:40:31 AM	A79194
Barium	ND	0.0011	0.0020		mg/L	1	6/18/2021 11:40:31 AM	A79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 11:40:31 AM	A79194
Boron	ND	0.0067	0.040		mg/L	1	6/18/2021 11:40:31 AM	A79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 11:40:31 AM	A79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 11:40:31 AM	A79194
Cobalt	ND	0.0024	0.0060		mg/L	1	6/18/2021 11:40:31 AM	A79194
Copper	ND	0.0035	0.0060		mg/L	1	6/18/2021 11:40:31 AM	A79194
Iron	ND	0.010	0.020		mg/L	1	6/18/2021 11:40:31 AM	A79194
Manganese	ND	0.00058	0.0020		mg/L	1	6/18/2021 11:40:31 AM	A79194
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/18/2021 11:40:31 AM	A79194
Nickel	ND	0.0033	0.010		mg/L	1	6/18/2021 11:40:31 AM	A79194
Silver	ND	0.0013	0.0050		mg/L	1	6/18/2021 11:40:31 AM	A79194
Zinc	0.013	0.0060	0.010		mg/L	1	6/18/2021 11:40:31 AM	A79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/21/2021 8:14:16 PM	B79234
Arsenic	ND	0.00012	0.0010		mg/L	1	6/21/2021 8:14:16 PM	B79234
Lead	ND	0.00028	0.0025		mg/L	5	6/23/2021 4:59:45 PM	B79314
Selenium	ND	0.00034	0.0010		mg/L	1	6/21/2021 8:14:16 PM	B79234
Thallium	ND	0.0012	0.0012		mg/L	5	6/23/2021 4:59:45 PM	B79314
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 11:01:48 AM	61092

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 11:20:00 AM
Lab ID: 2106895-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	5700	23	100		µg/L	100	6/18/2021 3:21:43 PM	R79222
Toluene	22	2.0	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Ethylbenzene	170	2.1	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Methyl tert-butyl ether (MTBE)	97	3.9	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,2,4-Trimethylbenzene	ND	1.2	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,2-Dichloroethane (EDC)	6.2	2.2	10	J	µg/L	10	6/18/2021 3:49:19 PM	R79222
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Naphthalene	ND	2.8	20		µg/L	10	6/18/2021 3:49:19 PM	R79222
1-Methylnaphthalene	ND	8.4	40		µg/L	10	6/18/2021 3:49:19 PM	R79222
2-Methylnaphthalene	ND	6.9	40		µg/L	10	6/18/2021 3:49:19 PM	R79222
Acetone	ND	23	100		µg/L	10	6/18/2021 3:49:19 PM	R79222
Bromobenzene	ND	2.8	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Bromodichloromethane	ND	2.0	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Bromoform	ND	3.1	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Bromomethane	ND	16	30		µg/L	10	6/18/2021 3:49:19 PM	R79222
2-Butanone	ND	11	100		µg/L	10	6/18/2021 3:49:19 PM	R79222
Carbon disulfide	ND	4.4	100		µg/L	10	6/18/2021 3:49:19 PM	R79222
Carbon Tetrachloride	ND	1.8	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Chlorobenzene	ND	1.4	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Chloroethane	ND	3.8	20		µg/L	10	6/18/2021 3:49:19 PM	R79222
Chloroform	2.4	1.3	10	J	µg/L	10	6/18/2021 3:49:19 PM	R79222
Chloromethane	ND	4.0	30		µg/L	10	6/18/2021 3:49:19 PM	R79222
2-Chlorotoluene	ND	1.3	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
4-Chlorotoluene	ND	5.1	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
cis-1,2-DCE	ND	3.9	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	6/18/2021 3:49:19 PM	R79222
Dibromochloromethane	ND	2.8	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Dibromomethane	ND	3.1	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Dichlorodifluoromethane	ND	4.4	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,1-Dichloroethane	20	2.7	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,1-Dichloroethene	7.0	1.3	10	J	µg/L	10	6/18/2021 3:49:19 PM	R79222
1,2-Dichloropropane	ND	1.3	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,3-Dichloropropane	ND	1.8	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
2,2-Dichloropropane	ND	2.6	20		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,1-Dichloropropene	ND	1.8	10		µg/L	10	6/18/2021 3:49:19 PM	R79222

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 11:20:00 AM
Lab ID: 2106895-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	3.3	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
2-Hexanone	ND	18	100		µg/L	10	6/18/2021 3:49:19 PM	R79222
Isopropylbenzene	16	1.8	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
4-Isopropyltoluene	ND	2.0	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
4-Methyl-2-pentanone	ND	11	100		µg/L	10	6/18/2021 3:49:19 PM	R79222
Methylene Chloride	ND	4.0	30		µg/L	10	6/18/2021 3:49:19 PM	R79222
n-Butylbenzene	5.3	2.5	30	J	µg/L	10	6/18/2021 3:49:19 PM	R79222
n-Propylbenzene	22	1.8	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
sec-Butylbenzene	ND	6.1	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Styrene	ND	1.3	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
tert-Butylbenzene	ND	2.4	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	6/18/2021 3:49:19 PM	R79222
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
trans-1,2-DCE	ND	4.9	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,2,3-Trichlorobenzene	ND	1.3	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,1,2-Trichloroethane	ND	1.9	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Trichlorofluoromethane	ND	0.92	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	6/18/2021 3:49:19 PM	R79222
Vinyl chloride	35	2.0	10		µg/L	10	6/18/2021 3:49:19 PM	R79222
Xylenes, Total	ND	5.5	15		µg/L	10	6/18/2021 3:49:19 PM	R79222
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	10	6/18/2021 3:49:19 PM	R79222
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	10	6/18/2021 3:49:19 PM	R79222
Surr: Dibromofluoromethane	97.4	0	70-130		%Rec	10	6/18/2021 3:49:19 PM	R79222
Surr: Toluene-d8	109	0	70-130		%Rec	10	6/18/2021 3:49:19 PM	R79222
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	1.4	0.028	0.050		mg/L	1	6/18/2021 3:49:19 PM	G79222
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	6/18/2021 3:49:19 PM	G79222

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 11:20:00 AM
Lab ID: 2106895-008B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	0.0036	0.0035	0.0094	J	µg/L	1	6/22/2021 11:45:55 PM	60808

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 11:20:00 AM
Lab ID: 2106895-008C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.69	0.016	0.064		mg/L	1	6/24/2021 7:21:27 AM	60769
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/24/2021 7:21:27 AM	60769
Surr: DNOP	99.2	0	15-142		%Rec	1	6/24/2021 7:21:27 AM	60769

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 11:20:00 AM
Lab ID: 2106895-008D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Azobenzene	ND	0.55	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Benzoic acid	ND	1.1	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Benzyl alcohol	ND	0.68	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Bis(2-ethylhexyl)phthalate	4.8	4.5	10	J	µg/L	1	6/23/2021 3:52:13 PM	60727
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Carbazole	4.5	0.56	5.0	J	µg/L	1	6/23/2021 3:52:13 PM	60727
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
4-Chloroaniline	ND	0.53	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
2-Chlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	6/23/2021 3:52:13 PM	60727
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	6/23/2021 3:52:13 PM	60727
Dibenzofuran	2.6	0.38	5.0	J	µg/L	1	6/23/2021 3:52:13 PM	60727
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Diethyl phthalate	ND	3.9	10		µg/L	1	6/23/2021 3:52:13 PM	60727
Dimethyl phthalate	ND	2.0	10		µg/L	1	6/23/2021 3:52:13 PM	60727
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Hexachloroethane	ND	0.45	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Isophorone	ND	0.40	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
2-Methylphenol	ND	0.51	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 11:20:00 AM
Lab ID: 2106895-008D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
2-Nitroaniline	ND	0.31	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
3-Nitroaniline	ND	1.6	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
4-Nitroaniline	ND	0.47	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Nitrobenzene	ND	0.51	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
2-Nitrophenol	ND	0.47	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
4-Nitrophenol	ND	0.28	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Pentachlorophenol	ND	0.59	20		µg/L	1	6/23/2021 3:52:13 PM	60727
Phenol	27	0.33	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Pyridine	ND	0.93	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	6/23/2021 3:52:13 PM	60727
Surr: 2-Fluorophenol	57.5	0	15-88.8		%Rec	1	6/23/2021 3:52:13 PM	60727
Surr: Phenol-d5	50.0	0	15-71.9		%Rec	1	6/23/2021 3:52:13 PM	60727
Surr: 2,4,6-Tribromophenol	89.1	0	15-97.4		%Rec	1	6/23/2021 3:52:13 PM	60727
Surr: Nitrobenzene-d5	67.9	0	15-117		%Rec	1	6/23/2021 3:52:13 PM	60727
Surr: 2-Fluorobiphenyl	73.9	0	15-100		%Rec	1	6/23/2021 3:52:13 PM	60727
Surr: 4-Terphenyl-d14	109	0	15-120		%Rec	1	6/23/2021 3:52:13 PM	60727
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	0.70	0.034	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
1-Methylnaphthalene	2.8	0.024	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
2-Methylnaphthalene	0.18	0.034	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
Acenaphthylene	ND	0.043	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
Acenaphthene	0.40	0.031	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
Fluorene	ND	0.031	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
Phenanthrene	0.14	0.057	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
Anthracene	ND	0.034	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
Fluoranthene	0.26	0.10	0.20		µg/L	1	6/22/2021 4:02:00 PM	60740
Pyrene	0.26	0.16	0.20		µg/L	1	6/22/2021 4:02:00 PM	60740
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
Chrysene	ND	0.024	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	6/22/2021 4:02:00 PM	60740
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	6/22/2021 4:02:00 PM	60740
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	6/22/2021 4:02:00 PM	60740
Surr: Nitrobenzene-d5	15.0	0	26.3-112	S	%Rec	1	6/22/2021 4:02:00 PM	60740
Surr: 2-Fluorobiphenyl	53.0	0	21.1-110		%Rec	1	6/22/2021 4:02:00 PM	60740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 11:20:00 AM
Lab ID: 2106895-008D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	58.5	0	17.6-167		%Rec	1	6/22/2021 4:02:00 PM	60740

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 11:20:00 AM
Lab ID: 2106895-008E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	ND	0.28	0.50		mg/L	5	6/17/2021 8:32:27 PM	R79172
Chloride	1000	25	50	*	mg/L	100	6/29/2021 2:24:54 AM	A79426
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/17/2021 8:32:27 PM	R79172
Bromide	1.2	0.25	0.50		mg/L	5	6/17/2021 8:32:27 PM	R79172
Nitrogen, Nitrate (As N)	0.10	0.10	0.50	J	mg/L	5	6/17/2021 8:32:27 PM	R79172
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/17/2021 8:32:27 PM	R79172
Sulfate	16	1.2	2.5		mg/L	5	6/17/2021 8:32:27 PM	R79172

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 11:20:00 AM
Lab ID: 2106895-008F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	7.8	0.074	0.20	*	mg/L	10	6/22/2021 1:34:02 PM	60803
Barium	0.69	0.0016	0.0030		mg/L	1	6/22/2021 1:31:08 PM	60803
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 1:31:08 PM	60803
Boron	0.69	0.0074	0.040		mg/L	1	6/22/2021 1:31:08 PM	60803
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 1:31:08 PM	60803
Calcium	200	1.1	10		mg/L	10	6/22/2021 1:34:02 PM	60803
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 1:31:08 PM	60803
Cobalt	0.013	0.0024	0.0060		mg/L	1	6/22/2021 1:31:08 PM	60803
Copper	ND	0.0047	0.0060		mg/L	1	6/22/2021 1:31:08 PM	60803
Iron	3.2	0.13	0.50	*	mg/L	10	6/22/2021 1:34:02 PM	60803
Magnesium	38	0.067	1.0		mg/L	1	6/22/2021 1:31:08 PM	60803
Manganese	3.5	0.0081	0.020	*	mg/L	10	6/22/2021 1:34:02 PM	60803
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/22/2021 1:31:08 PM	60803
Nickel	0.032	0.0033	0.010		mg/L	1	6/22/2021 1:31:08 PM	60803
Potassium	3.6	0.16	1.0		mg/L	1	6/22/2021 1:31:08 PM	60803
Silver	ND	0.0013	0.0050		mg/L	1	6/22/2021 1:31:08 PM	60803
Sodium	710	1.9	10		mg/L	10	6/22/2021 1:34:02 PM	60803
Zinc	0.0069	0.0064	0.010	J	mg/L	1	6/22/2021 1:31:08 PM	60803
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/22/2021 3:34:38 PM	60803
Arsenic	0.0032	0.00013	0.0010		mg/L	1	6/22/2021 3:34:38 PM	60803
Lead	0.0056	0.00031	0.0025		mg/L	5	6/22/2021 5:00:17 PM	60803
Selenium	0.0011	0.00037	0.0010		mg/L	1	6/22/2021 3:34:38 PM	60803
Thallium	ND	0.0012	0.0012		mg/L	5	6/22/2021 5:00:17 PM	60803
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 2:04:12 PM	60773

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-24
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021 11:20:00 AM
Lab ID: 2106895-008G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	0.0095	0.0056	0.020	J	mg/L	1	6/18/2021 11:49:50 AM	A79194
Barium	0.62	0.0011	0.0020		mg/L	1	6/18/2021 11:49:50 AM	A79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 11:49:50 AM	A79194
Boron	0.70	0.0067	0.040		mg/L	1	6/18/2021 11:49:50 AM	A79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 11:49:50 AM	A79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 11:49:50 AM	A79194
Cobalt	0.011	0.0024	0.0060		mg/L	1	6/18/2021 11:49:50 AM	A79194
Copper	ND	0.0035	0.0060		mg/L	1	6/18/2021 11:49:50 AM	A79194
Iron	0.30	0.010	0.020		mg/L	1	6/18/2021 11:49:50 AM	A79194
Manganese	3.3	0.0058	0.020	*	mg/L	10	6/18/2021 11:51:29 AM	A79194
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/18/2021 11:49:50 AM	A79194
Nickel	0.032	0.0033	0.010		mg/L	1	6/18/2021 11:49:50 AM	A79194
Silver	ND	0.0013	0.0050		mg/L	1	6/18/2021 11:49:50 AM	A79194
Zinc	0.013	0.0060	0.010		mg/L	1	6/18/2021 11:49:50 AM	A79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/23/2021 5:09:14 PM	B79314
Arsenic	0.0022	0.00061	0.0050	J	mg/L	5	6/23/2021 5:09:14 PM	B79314
Lead	0.0014	0.00028	0.0025	J	mg/L	5	6/23/2021 5:09:14 PM	B79314
Selenium	ND	0.0017	0.0050		mg/L	5	6/23/2021 5:09:14 PM	B79314
Thallium	ND	0.0012	0.0012		mg/L	5	6/23/2021 5:09:14 PM	B79314
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 11:04:12 AM	61092

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021
Lab ID: 2106895-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.26	0.23	1.0	J	µg/L	1	6/18/2021 4:44:39 PM	R79222
Toluene	ND	0.20	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Naphthalene	ND	0.28	2.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Acetone	6.4	2.3	10	J	µg/L	1	6/18/2021 4:44:39 PM	R79222
Bromobenzene	ND	0.28	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Bromoform	ND	0.31	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Bromomethane	ND	1.6	3.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
2-Butanone	1.4	1.1	10	J	µg/L	1	6/18/2021 4:44:39 PM	R79222
Carbon disulfide	ND	0.44	10		µg/L	1	6/18/2021 4:44:39 PM	R79222
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Chloroethane	ND	0.38	2.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Chloroform	0.29	0.13	1.0	J	µg/L	1	6/18/2021 4:44:39 PM	R79222
Chloromethane	ND	0.40	3.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Dibromomethane	ND	0.31	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,1-Dichloroethane	0.53	0.27	1.0	J	µg/L	1	6/18/2021 4:44:39 PM	R79222
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021
Lab ID: 2106895-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
2-Hexanone	ND	1.8	10		µg/L	1	6/18/2021 4:44:39 PM	R79222
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/18/2021 4:44:39 PM	R79222
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Styrene	ND	0.13	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/18/2021 4:44:39 PM	R79222
Xylenes, Total	ND	0.55	1.5		µg/L	1	6/18/2021 4:44:39 PM	R79222
Surr: 1,2-Dichloroethane-d4	124	0	70-130		%Rec	1	6/18/2021 4:44:39 PM	R79222
Surr: 4-Bromofluorobenzene	109	0	70-130		%Rec	1	6/18/2021 4:44:39 PM	R79222
Surr: Dibromofluoromethane	112	0	70-130		%Rec	1	6/18/2021 4:44:39 PM	R79222
Surr: Toluene-d8	106	0	70-130		%Rec	1	6/18/2021 4:44:39 PM	R79222
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.030	0.028	0.050	J	mg/L	1	6/18/2021 4:44:39 PM	G79222
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	6/18/2021 4:44:39 PM	G79222

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021
Lab ID: 2106895-009B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	6/23/2021 12:01:11 AM	60808

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021
Lab ID: 2106895-009C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.039	0.016	0.064	J	mg/L	1	6/24/2021 7:45:11 AM	60769
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/24/2021 7:45:11 AM	60769
Surr: DNOP	98.9	0	15-142		%Rec	1	6/24/2021 7:45:11 AM	60769

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021
Lab ID: 2106895-009D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Azobenzene	ND	0.55	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Benzoic acid	ND	1.1	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Benzyl alcohol	ND	0.68	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	6/23/2021 4:34:52 PM	60727
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Carbazole	ND	0.56	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
4-Chloroaniline	ND	0.53	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
2-Chlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	6/23/2021 4:34:52 PM	60727
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	6/23/2021 4:34:52 PM	60727
Dibenzofuran	ND	0.38	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Diethyl phthalate	ND	3.9	10		µg/L	1	6/23/2021 4:34:52 PM	60727
Dimethyl phthalate	ND	2.0	10		µg/L	1	6/23/2021 4:34:52 PM	60727
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Hexachloroethane	ND	0.45	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Isophorone	ND	0.40	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
2-Methylphenol	ND	0.51	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727

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Qualifiers:

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Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021
Lab ID: 2106895-009D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
2-Nitroaniline	ND	0.31	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
3-Nitroaniline	ND	1.6	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
4-Nitroaniline	ND	0.47	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Nitrobenzene	ND	0.51	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
2-Nitrophenol	ND	0.47	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
4-Nitrophenol	ND	0.28	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Pentachlorophenol	ND	0.59	20		µg/L	1	6/23/2021 4:34:52 PM	60727
Phenol	ND	0.33	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Pyridine	ND	0.93	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	6/23/2021 4:34:52 PM	60727
Surr: 2-Fluorophenol	55.5	0	15-88.8		%Rec	1	6/23/2021 4:34:52 PM	60727
Surr: Phenol-d5	45.3	0	15-71.9		%Rec	1	6/23/2021 4:34:52 PM	60727
Surr: 2,4,6-Tribromophenol	84.4	0	15-97.4		%Rec	1	6/23/2021 4:34:52 PM	60727
Surr: Nitrobenzene-d5	58.6	0	15-117		%Rec	1	6/23/2021 4:34:52 PM	60727
Surr: 2-Fluorobiphenyl	67.6	0	15-100		%Rec	1	6/23/2021 4:34:52 PM	60727
Surr: 4-Terphenyl-d14	103	0	15-120		%Rec	1	6/23/2021 4:34:52 PM	60727
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
Acenaphthylene	ND	0.043	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
Acenaphthene	ND	0.031	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
Fluorene	ND	0.031	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
Phenanthrene	ND	0.057	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
Anthracene	ND	0.034	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
Fluoranthene	ND	0.10	0.20		µg/L	1	6/22/2021 4:46:00 PM	60740
Pyrene	ND	0.16	0.20		µg/L	1	6/22/2021 4:46:00 PM	60740
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
Chrysene	ND	0.024	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	6/22/2021 4:46:00 PM	60740
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	6/22/2021 4:46:00 PM	60740
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	6/22/2021 4:46:00 PM	60740
Surr: Nitrobenzene-d5	68.0	0	26.3-112		%Rec	1	6/22/2021 4:46:00 PM	60740
Surr: 2-Fluorobiphenyl	62.5	0	21.1-110		%Rec	1	6/22/2021 4:46:00 PM	60740

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Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021
Lab ID: 2106895-009D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	62.5	0	17.6-167		%Rec	1	6/22/2021 4:46:00 PM	60740

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021
Lab ID: 2106895-009E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Fluoride	0.43	0.28	0.50	J	mg/L	5	6/17/2021 8:57:09 PM	R79172
Chloride	340	5.0	10	*	mg/L	20	6/17/2021 9:09:31 PM	R79172
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/17/2021 8:57:09 PM	R79172
Bromide	0.29	0.25	0.50	J	mg/L	5	6/17/2021 8:57:09 PM	R79172
Nitrogen, Nitrate (As N)	2.1	0.10	0.50		mg/L	5	6/17/2021 8:57:09 PM	R79172
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/17/2021 8:57:09 PM	R79172
Sulfate	490	5.0	10	*	mg/L	20	6/17/2021 9:09:31 PM	R79172

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Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021
Lab ID: 2106895-009F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.94	0.074	0.20	*	mg/L	10	6/22/2021 1:38:50 PM	60803
Barium	0.053	0.0016	0.0030		mg/L	1	6/22/2021 1:35:38 PM	60803
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 1:35:38 PM	60803
Boron	0.18	0.0074	0.040		mg/L	1	6/22/2021 1:35:38 PM	60803
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 1:35:38 PM	60803
Calcium	210	1.1	10		mg/L	10	6/22/2021 1:38:50 PM	60803
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 1:35:38 PM	60803
Cobalt	0.0041	0.0024	0.0060	J	mg/L	1	6/22/2021 1:35:38 PM	60803
Copper	ND	0.0047	0.0060		mg/L	1	6/22/2021 1:35:38 PM	60803
Iron	0.52	0.013	0.050	*	mg/L	1	6/22/2021 1:35:38 PM	60803
Magnesium	44	0.067	1.0		mg/L	1	6/22/2021 1:35:38 PM	60803
Manganese	0.65	0.00081	0.0020	*	mg/L	1	6/22/2021 1:35:38 PM	60803
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/22/2021 1:35:38 PM	60803
Nickel	ND	0.0033	0.010		mg/L	1	6/22/2021 1:35:38 PM	60803
Potassium	2.2	0.16	1.0		mg/L	1	6/22/2021 1:35:38 PM	60803
Silver	ND	0.0013	0.0050		mg/L	1	6/22/2021 1:35:38 PM	60803
Sodium	220	1.9	10		mg/L	10	6/22/2021 1:38:50 PM	60803
Zinc	ND	0.0064	0.010		mg/L	1	6/22/2021 1:35:38 PM	60803
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/22/2021 3:37:03 PM	60803
Arsenic	0.0012	0.00013	0.0010		mg/L	1	6/22/2021 3:37:03 PM	60803
Lead	0.00060	0.00031	0.0025	J	mg/L	5	6/22/2021 5:07:35 PM	60803
Selenium	0.00048	0.00037	0.0010	J	mg/L	1	6/22/2021 3:37:03 PM	60803
Thallium	ND	0.0012	0.0012		mg/L	5	6/22/2021 5:07:35 PM	60803
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 2:06:37 PM	60773

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/16/2021
Project: 2021 GW Sampling 2nd Quarter
Collection Date: 6/16/2021
Lab ID: 2106895-009G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/18/2021 11:53:04 AM	A79194
Barium	0.029	0.0011	0.0020		mg/L	1	6/18/2021 11:53:04 AM	A79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 11:53:04 AM	A79194
Boron	0.18	0.0067	0.040		mg/L	1	6/18/2021 11:53:04 AM	A79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 11:53:04 AM	A79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 11:53:04 AM	A79194
Cobalt	0.0032	0.0024	0.0060	J	mg/L	1	6/18/2021 11:53:04 AM	A79194
Copper	ND	0.0035	0.0060		mg/L	1	6/18/2021 11:53:04 AM	A79194
Iron	ND	0.010	0.020		mg/L	1	6/18/2021 11:53:04 AM	A79194
Manganese	0.40	0.00058	0.0020	*	mg/L	1	6/18/2021 11:53:04 AM	A79194
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/18/2021 11:53:04 AM	A79194
Nickel	ND	0.0033	0.010		mg/L	1	6/18/2021 11:53:04 AM	A79194
Silver	ND	0.0013	0.0050		mg/L	1	6/18/2021 11:53:04 AM	A79194
Zinc	0.014	0.0060	0.010		mg/L	1	6/18/2021 11:53:04 AM	A79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/23/2021 5:13:59 PM	B79314
Arsenic	0.00081	0.00061	0.0050	J	mg/L	5	6/23/2021 5:13:59 PM	B79314
Lead	ND	0.00028	0.0025		mg/L	5	6/23/2021 5:13:59 PM	B79314
Selenium	ND	0.0017	0.0050		mg/L	5	6/23/2021 5:13:59 PM	B79314
Thallium	ND	0.0012	0.0012		mg/L	5	6/23/2021 5:13:59 PM	B79314
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 11:06:35 AM	61092

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2106895-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.23	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Toluene	ND	0.20	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Naphthalene	ND	0.28	2.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Acetone	ND	2.3	10		µg/L	1	6/18/2021 5:12:22 PM	R79222
Bromobenzene	ND	0.28	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Bromoform	ND	0.31	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Bromomethane	ND	1.6	3.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
2-Butanone	ND	1.1	10		µg/L	1	6/18/2021 5:12:22 PM	R79222
Carbon disulfide	ND	0.44	10		µg/L	1	6/18/2021 5:12:22 PM	R79222
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Chloroethane	ND	0.38	2.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Chloroform	ND	0.13	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Chloromethane	ND	0.40	3.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Dibromomethane	ND	0.31	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2106895-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
2-Hexanone	ND	1.8	10		µg/L	1	6/18/2021 5:12:22 PM	R79222
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/18/2021 5:12:22 PM	R79222
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Styrene	ND	0.13	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/18/2021 5:12:22 PM	R79222
Xylenes, Total	ND	0.55	1.5		µg/L	1	6/18/2021 5:12:22 PM	R79222
Surr: 1,2-Dichloroethane-d4	119	0	70-130		%Rec	1	6/18/2021 5:12:22 PM	R79222
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	6/18/2021 5:12:22 PM	R79222
Surr: Dibromofluoromethane	109	0	70-130		%Rec	1	6/18/2021 5:12:22 PM	R79222
Surr: Toluene-d8	108	0	70-130		%Rec	1	6/18/2021 5:12:22 PM	R79222
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.030	0.028	0.050	J	mg/L	1	6/18/2021 5:12:22 PM	G79222
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	6/18/2021 5:12:22 PM	G79222

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106895**
Date Reported: **7/12/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2106895-010B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0035	0.0094		µg/L	1	6/23/2021 12:16:34 AM	60808

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

July 08, 2021

Vista Work Order No. 2106147

Mr. Andy Freeman
Hall Environmental Analytical Laboratory
4901 Hawkins NE
Albuquerque, NM 87109

Dear Mr. Freeman,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on June 18, 2021 under your Project Name '2106895'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

for

Martha Maier
Laboratory Director

Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 2106147
Case Narrative

Sample Condition on Receipt:

One aqueous sample was received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The sample was received in good condition and within the recommended temperature requirements.

Analytical Notes:

PFAS Isotope Dilution Method

The sample contained particulate and was centrifuged prior to extraction.

The sample was extracted and analyzed for a selected list of PFAS using Vista's PFAS Isotope Dilution Method. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The sample was extracted and analyzed within the hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2106147-01	OW-63	15-Jun-21 14:20	18-Jun-21 09:10	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

Vista Project: 2106147 Client Project: 2106895

ANALYTICAL RESULTS

Vista Analytical Laboratory

Sample ID: Method Blank **PFAS Isotope Dilution Method**

Client Data
Name: Hall Environmental Analytical Laboratory Matrix: Aqueous
Project: 2106895

Laboratory Data
Lab Sample: B1F0139-BLK1 Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFPeA	2706-90-3	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFBS	375-73-5	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
4:2 FTS	757124-72-4	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFHxA	307-24-4	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFPeS	2706-91-4	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFHpA	375-85-9	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFHxS	355-46-4	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
6:2 FTS	27619-97-2	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFOA	335-67-1	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFHpS	375-92-8	ND	2.50		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFNA	375-95-1	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFOSA	754-91-6	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFOS	1763-23-1	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFDA	335-76-2	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
8:2 FTS	39108-34-4	ND	2.25		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFNS	68259-12-1	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
MeFOSAA	2355-31-9	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
EtFOSAA	2991-50-6	ND	2.63		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFUnA	2058-94-8	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFDS	335-77-3	ND	2.75		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFDoA	307-55-1	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFTrDA	72629-94-8	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
PFTeDA	376-06-7	ND	2.00		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	145	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C3-PFPeA	IS	87.0	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C3-PFBS	IS	77.6	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C2-4:2 FTS	IS	82.2	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C2-PFHxA	IS	88.1	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C4-PFHpA	IS	89.1	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C3-PFHxS	IS	92.9	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C2-6:2 FTS	IS	75.2	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C5-PFNA	IS	88.3	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C8-PFOSA	IS	67.4	10 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C2-PFOA	IS	94.3	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C8-PFOS	IS	79.0	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C2-PFDA	IS	81.5	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1

Vista Analytical Laboratory

Sample ID: Method Blank **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory Matrix: Aqueous

Project: 2106895

Laboratory Data

Lab Sample: B1F0139-BLK1 Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-8:2 FTS	IS	86.9	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
d3-MeFOSAA	IS	67.3	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C2-PFUnA	IS	71.8	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
d5-EtFOSAA	IS	60.6	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C2-PFDoA	IS	71.3	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1
13C2-PFTeDA	IS	79.8	20 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:03	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Vista Analytical Laboratory

Sample ID: OPR — **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2106895
Matrix: Aqueous

Laboratory Data

Lab Sample: B1F0139-BS1
Column: BEH C18

Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	41.4	40.0	104	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFPeA	2706-90-3	45.2	40.0	113	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFBS	375-73-5	41.8	40.0	105	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
4:2 FTS	757124-72-4	45.4	40.0	113	60 - 145		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFHxA	307-24-4	42.3	40.0	106	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFPeS	2706-91-4	43.7	40.0	109	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFHpA	375-85-9	41.5	40.0	104	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFHxS	355-46-4	43.4	40.0	108	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
6:2 FTS	27619-97-2	43.5	40.0	109	60 - 140		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFOA	335-67-1	39.1	40.0	97.7	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFHpS	375-92-8	43.4	40.0	109	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFNA	375-95-1	41.1	40.0	103	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFOSA	754-91-6	45.4	40.0	114	65 - 140		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFOS	1763-23-1	40.8	40.0	102	65 - 140		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFDA	335-76-2	41.5	40.0	104	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
8:2 FTS	39108-34-4	45.2	40.0	113	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFNS	68259-12-1	37.2	40.0	93.1	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
MeFOSAA	2355-31-9	45.3	40.0	113	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
EtFOSAA	2991-50-6	39.4	40.0	98.4	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFUnA	2058-94-8	40.2	40.0	101	65 - 140		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFDS	335-77-3	38.5	40.0	96.3	50 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFDoA	307-55-1	41.3	40.0	103	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFTrDA	72629-94-8	43.2	40.0	108	60 - 140		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
PFTeDA	376-06-7	41.6	40.0	104	65 - 135		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	149	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C3-PFPeA	IS	89.4	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C3-PFBS	IS	89.0	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C2-4:2 FTS	IS	80.3	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C2-PFHxA	IS	92.2	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C4-PFHpA	IS	90.9	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C3-PFHxS	IS	94.6	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C2-6:2 FTS	IS	77.0	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C5-PFNA	IS	93.8	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C8-PFOSA	IS	73.8	10 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1

Vista Analytical Laboratory

Sample ID: OPR — **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2106895
Matrix: Aqueous

Laboratory Data

Lab Sample: B1F0139-BS1
Column: BEH C18

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFOA	IS	95.7	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C8-PFOS	IS	89.5	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C2-PFDA	IS	88.3	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C2-8:2 FTS	IS	87.4	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
d3-MeFOSAA	IS	73.1	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C2-PFUnA	IS	80.1	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
d5-EtFOSAA	IS	70.7	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C2-PFDoA	IS	80.2	25 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1
13C2-PFTeDA	IS	83.8	20 - 150		B1F0139	25-Jun-21	0.250 L	01-Jul-21 18:14	1

Vista Analytical Laboratory

Sample ID: OW-63 **PFAS Isotope Dilution Method**

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2106895
Location: 2106895-001G
Matrix: Aqueous
Date Collected: 15-Jun-21 14:20

Laboratory Data

Lab Sample: 2106147-01
Date Received: 18-Jun-21 09:10
Column: BEH C18

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFPeA	2706-90-3	352	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFBS	375-73-5	38.4	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
4:2 FTS	757124-72-4	ND	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFHxA	307-24-4	355	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFPeS	2706-91-4	44.5	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFHpA	375-85-9	137	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFHxS	355-46-4	325	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
6:2 FTS	27619-97-2	400	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFOA	335-67-1	127	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFHpS	375-92-8	12.4	2.44		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFNA	375-95-1	522	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFOSA	754-91-6	ND	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFOS	1763-23-1	547	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFDA	335-76-2	12.8	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
8:2 FTS	39108-34-4	46.1	2.20		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFNS	68259-12-1	ND	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
MeFOSAA	2355-31-9	ND	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
EtFOSAA	2991-50-6	ND	2.56		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFUnA	2058-94-8	82.3	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFDS	335-77-3	ND	2.69		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFDoA	307-55-1	ND	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFTrDA	72629-94-8	ND	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
PFTeDA	376-06-7	ND	1.95		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	107	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C3-PFPeA	IS	79.5	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C3-PFBS	IS	86.3	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C2-4:2 FTS	IS	78.0	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C2-PFHxA	IS	76.4	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C4-PFHpA	IS	79.4	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C3-PFHxS	IS	93.3	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C2-6:2 FTS	IS	77.3	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C5-PFNA	IS	82.5	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C8-PFOSA	IS	60.2	10 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C2-PFOA	IS	91.3	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C8-PFOS	IS	88.0	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1

Vista Analytical Laboratory

Sample ID: OW-63

PFAS Isotope Dilution Method

Client Data

Name: Hall Environmental Analytical Laboratory
Project: 2106895
Location: 2106895-001G
Matrix: Aqueous
Date Collected: 15-Jun-21 14:20

Laboratory Data

Lab Sample: 2106147-01
Date Received: 18-Jun-21 09:10
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	79.4	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C2-8:2 FTS	IS	91.6	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
d3-MeFOSAA	IS	75.7	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C2-PFUnA	IS	77.1	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
d5-EtFOSAA	IS	70.0	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C2-PFDoA	IS	73.2	25 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1
13C2-PFTeDA	IS	69.7	20 - 150		B1F0139	25-Jun-21	0.256 L	01-Jul-21 20:59	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
RL	For 537.1, the reported RLs are the MRLs.
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculation that uses the detection limit as the concentration for non-detects
TEQMin	TEQ calculation that uses zero as the concentration for non-detects
TEQRisk	TEQ calculation that uses ½ the detection limit as the concentration for non-detects
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-26
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1980678
New Hampshire Environmental Accreditation Program	207720
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-016
Pennsylvania Department of Environmental Protection	017
Texas Commission on Environmental Quality	T104704189-21-12
Vermont Department of Health	VT-4042
Virginia Department of General Services	10769
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p- Dioxins & Polychlorinated Dibenzofurans	EPA 23
Polychlorinated Dibenzodioxins in Ambient Air by GC/HRMS	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613/1613B
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537.1
Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry	EPA 533
Perfluorooctanesulonate (PFOS) and Perfluorooctanoate (PFOA) - Method for Unfiltered Samples Using Solid Phase Extraction and Liquid Chromatography/Mass Spectrometry	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

2106147 0.2 °C

SUB CONTRATOR: Vista Analytical Labor	COMPANY: Vista Analytical Laboratory	PHONE (916) 673-1520	FAX:
ADDRESS: 1104 Windfield Way		ACCOUNT #	EMAIL:
CITY, STATE, ZIP: El Dorado Hills, CA 95762			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2106895-001G	OW-63	250HDPE	Aqueous	6/15/2021 2:20:00 PM	2	24 compound PFAS testing unchlorinated sample

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 6/17/2021	Time: 9:07 AM	Received By:	Date: 06/18/21	Time: 0910
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples _____ °C Attempt to Cool ? _____
Comments: _____

Released to Imaging: 11/23/2022 10:23:25 AM
Received by OCD: 3/25/2022 3:35:30 PM

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: ~~2106113~~ 2106147 (06/19/21) TAT STD

Samples Arrival:	**Date/Time** 06/18/21 0910		**Initials:** MWS		**Location:** WR-2 **Shelf/Rack:** N/a		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	Ice		(Blue Ice)		Techni Ice	Dry Ice	None
Temp °C: 0.3 (uncorrected) / **Temp °C:** 0.2 (corrected)	**Probe used:** Y / (N)		**Thermometer ID:** IR-4				

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill — Trk # 7740 3319 8050	✓		
Shipping Documentation Present?	✓		
Shipping Container: Vista / (Client) / Retain / (Return)		Dispose	
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** 06/19/21 10:54	**Initials:** (QB)	**Location:** R-13 ↓ A-3 WR-2 ↓ E-4 **Shelf/Rack:**
COC Anomaly/Sample Acceptance Form completed?		—	—

Comments:

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CoC/Label Reconciliation Report WO# 2106147

LabNumber	CoC Sample ID		SampleAlias	Sample Date/Time		Container	BaseMatrix	Sample Comments
2106147-01	A OW-63 (A)	☑	2106895-001G	15-Jun-21 14:20	☑	HDPE Bottle, 250 mL	Aqueous	
2106147-01	B OW-63	☑	2106895-001G	15-Jun-21 14:20	☑	HDPE Bottle, 250 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?		✓	✓
Adequate Sample Volume?	✓		
Container Type Appropriate for Analysis(es)	✓		

Comments:
A: Samples are light brown in color.

Preservation Documented: Na2S2O3 Trizma (All) NH4CH3CO2 None Other

Verifed by/Date: 06/19/21

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **A79194**	RunNo: **79194**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2779603** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **A79194**	RunNo: **79194**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2779605** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.011	0.020	0.01000	0	105	50	150			J
Barium	0.0021	0.0030	0.002000	0	105	50	150			J
Beryllium	0.0023	0.0020	0.002000	0	114	50	150			
Boron	0.040	0.040	0.04000	0	99.3	50	150			J
Cadmium	0.0021	0.0020	0.002000	0	107	50	150			
Chromium	0.0064	0.0060	0.006000	0	106	50	150			
Cobalt	0.0056	0.0060	0.006000	0	93.0	50	150			J
Copper	0.0056	0.0060	0.006000	0	92.9	50	150			J
Iron	0.021	0.050	0.02000	0	103	50	150			J
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Molybdenum	0.0099	0.0080	0.008000	0	124	50	150			
Nickel	0.0045	0.010	0.005000	0	90.5	50	150			J
Silver	0.0046	0.0050	0.005000	0	91.9	50	150			J
Zinc	0.0081	0.010	0.01000	0	81.0	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **A79194**	RunNo: **79194**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2779607** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **A79194**	RunNo: **79194**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2779607** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	111	85	115			
Barium	0.50	0.0030	0.5000	0	99.1	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.2	85	115			
Boron	0.52	0.040	0.5000	0	103	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.4	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.4	85	115			
Copper	0.48	0.0060	0.5000	0	95.8	85	115			
Iron	0.50	0.050	0.5000	0	99.1	85	115			
Manganese	0.49	0.0020	0.5000	0	97.0	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.48	0.010	0.5000	0	95.3	85	115			
Silver	0.098	0.0050	0.1000	0	98.0	85	115			
Zinc	0.49	0.010	0.5000	0	97.8	85	115			

Sample ID: **MB-60803**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **60803**	RunNo: **79254**
Prep Date: **6/21/2021**	Analysis Date: **6/22/2021**	SeqNo: **2783295** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LLLCS-60803** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **60803** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783297** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.011	0.020	0.01000	0	114	50	150			J
Barium	0.0017	0.0030	0.002000	0	83.6	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	93.1	50	150			J
Boron	0.040	0.040	0.04000	0	98.8	50	150			J
Cadmium	0.0018	0.0020	0.002000	0	90.0	50	150			J
Calcium	0.50	1.0	0.5000	0	99.3	50	150			J
Chromium	0.0053	0.0060	0.006000	0	88.9	50	150			J
Cobalt	0.0073	0.0060	0.006000	0	122	50	150			
Copper	0.0061	0.0060	0.006000	0	101	50	150			
Iron	0.022	0.050	0.02000	0	110	50	150			J
Magnesium	0.50	1.0	0.5000	0	99.2	50	150			J
Manganese	0.0021	0.0020	0.002000	0	104	50	150			
Molybdenum	0.0095	0.0080	0.008000	0	119	50	150			
Nickel	0.0035	0.010	0.005000	0	71.0	50	150			J
Potassium	0.50	1.0	0.5000	0	99.2	50	150			J
Silver	0.0050	0.0050	0.005000	0	99.6	50	150			J
Sodium	0.48	1.0	0.5000	0	96.9	50	150			J
Zinc	0.010	0.010	0.01000	0	103	50	150			

Sample ID: **LCS-60803** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **60803** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783299** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0030	0.5000	0	101	85	115			
Beryllium	0.53	0.0020	0.5000	0	105	85	115			
Boron	0.54	0.040	0.5000	0	107	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Calcium	51	1.0	50.00	0	101	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.4	85	115			
Copper	0.50	0.0060	0.5000	0	99.6	85	115			
Iron	0.50	0.050	0.5000	0	100	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Manganese	0.50	0.0020	0.5000	0	99.6	85	115			
Molybdenum	0.53	0.0080	0.5000	0	106	85	115			
Nickel	0.50	0.010	0.5000	0	99.2	85	115			
Potassium	51	1.0	50.00	0	101	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LCS-60803** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **60803** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783299** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	51	1.0	50.00	0	102	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Sample ID: **LCS-60803** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **60803** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783306** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.55	0.020	0.5000	0	110	85	115			

Sample ID: **2106895-004EMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-28** Batch ID: **60803** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784012** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.56	0.0030	0.5000	0.08381	96.2	70	130			
Beryllium	0.50	0.0020	0.5000	0	99.6	70	130			
Cadmium	0.47	0.0020	0.5000	0	94.4	70	130			
Chromium	0.49	0.0060	0.5000	0	97.1	70	130			
Cobalt	0.47	0.0060	0.5000	0.002778	94.4	70	130			
Copper	0.50	0.0060	0.5000	0	101	70	130			
Magnesium	62	1.0	50.00	11.96	101	70	130			
Manganese	0.59	0.0020	0.5000	0.1148	94.4	70	130			
Molybdenum	0.51	0.0080	0.5000	0	102	70	130			
Nickel	0.47	0.010	0.5000	0.005180	92.3	70	130			
Potassium	56	1.0	50.00	2.721	107	70	130			
Silver	0.10	0.0050	0.1000	0	99.6	70	130			
Zinc	0.51	0.010	0.5000	0.01320	99.0	70	130			

Sample ID: **2106895-004EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-28** Batch ID: **60803** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784013** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.59	0.0030	0.5000	0.08381	101	70	130	4.03	20	
Beryllium	0.52	0.0020	0.5000	0	104	70	130	4.52	20	
Cadmium	0.49	0.0020	0.5000	0	98.7	70	130	4.45	20	
Chromium	0.51	0.0060	0.5000	0	102	70	130	4.52	20	
Cobalt	0.49	0.0060	0.5000	0.002778	98.2	70	130	3.96	20	
Copper	0.50	0.0060	0.5000	0	99.6	70	130	1.06	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **2106895-004EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-28** Batch ID: **60803** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784013** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	61	1.0	50.00	11.96	98.5	70	130	1.81	20	
Manganese	0.59	0.0020	0.5000	0.1148	94.6	70	130	0.129	20	
Molybdenum	0.53	0.0080	0.5000	0	106	70	130	4.17	20	
Nickel	0.49	0.010	0.5000	0.005180	96.4	70	130	4.27	20	
Potassium	55	1.0	50.00	2.721	104	70	130	2.18	20	
Silver	0.10	0.0050	0.1000	0	103	70	130	3.33	20	
Zinc	0.53	0.010	0.5000	0.01320	104	70	130	4.56	20	

Sample ID: **2106895-004EMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-28** Batch ID: **60803** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784015** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	4.4	0.10	0.5000	2.634	348	70	130			S
Boron	2.0	0.20	0.5000	1.514	100	70	130			
Calcium	110	5.0	50.00	60.06	91.1	70	130			
Iron	2.2	0.25	0.5000	1.641	105	70	130			

Sample ID: **2106895-004EMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-28** Batch ID: **60803** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784016** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	4.3	0.10	0.5000	2.634	336	70	130	1.34	20	S
Boron	1.9	0.20	0.5000	1.514	86.8	70	130	3.40	20	
Calcium	110	5.0	50.00	60.06	92.4	70	130	0.645	20	
Iron	2.2	0.25	0.5000	1.641	108	70	130	0.614	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A79194**	RunNo: **79194**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2779604** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A79194**	RunNo: **79194**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2779606** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.011	0.020	0.01000	0	105	50	150			J
Barium	0.0021	0.0020	0.002000	0	105	50	150			
Beryllium	0.0023	0.0020	0.002000	0	114	50	150			
Boron	0.040	0.040	0.04000	0	99.3	50	150			J
Cadmium	0.0021	0.0020	0.002000	0	107	50	150			
Chromium	0.0064	0.0060	0.006000	0	106	50	150			
Cobalt	0.0056	0.0060	0.006000	0	93.0	50	150			J
Copper	0.0056	0.0060	0.006000	0	92.9	50	150			J
Iron	0.021	0.020	0.02000	0	103	50	150			
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Molybdenum	0.0099	0.0080	0.008000	0	124	50	150			
Nickel	0.0045	0.010	0.005000	0	90.5	50	150			J
Silver	0.0046	0.0050	0.005000	0	91.9	50	150			J
Zinc	0.0081	0.010	0.01000	0	81.0	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A79194**	RunNo: **79194**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2779608** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A79194** RunNo: **79194**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2779608** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	111	85	115			
Barium	0.50	0.0020	0.5000	0	99.1	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.2	85	115			
Boron	0.52	0.040	0.5000	0	103	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.4	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.4	85	115			
Copper	0.48	0.0060	0.5000	0	95.8	85	115			
Iron	0.50	0.020	0.5000	0	99.1	85	115			
Manganese	0.49	0.0020	0.5000	0	97.0	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.48	0.010	0.5000	0	95.3	85	115			
Silver	0.098	0.0050	0.1000	0	98.0	85	115			
Zinc	0.49	0.010	0.5000	0	97.8	85	115			

Sample ID: **2106895-007FMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 6/16/2021** Batch ID: **A79194** RunNo: **79194**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2779652** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.57	0.020	0.5000	0	113	70	130			
Barium	0.52	0.0020	0.5000	0	103	70	130			
Beryllium	0.54	0.0020	0.5000	0	108	70	130			
Boron	0.54	0.040	0.5000	0	109	70	130			
Cadmium	0.52	0.0020	0.5000	0	103	70	130			
Chromium	0.50	0.0060	0.5000	0	100	70	130			
Cobalt	0.50	0.0060	0.5000	0	100	70	130			
Copper	0.49	0.0060	0.5000	0	98.8	70	130			
Iron	0.50	0.020	0.5000	0	100	70	130			
Manganese	0.50	0.0020	0.5000	0	99.8	70	130			
Molybdenum	0.52	0.0080	0.5000	0	104	70	130			
Nickel	0.50	0.010	0.5000	0	99.2	70	130			
Silver	0.098	0.0050	0.1000	0	97.8	70	130			
Zinc	0.56	0.010	0.5000	0.01348	109	70	130			

Sample ID: **2106895-007FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 6/16/2021** Batch ID: **A79194** RunNo: **79194**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2779653** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **2106895-007FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 6/16/2021** Batch ID: **A79194** RunNo: **79194**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2779653** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.55	0.020	0.5000	0	110	70	130	3.26	20	
Barium	0.49	0.0020	0.5000	0	98.0	70	130	5.12	20	
Beryllium	0.52	0.0020	0.5000	0	104	70	130	3.85	20	
Boron	0.52	0.040	0.5000	0	104	70	130	4.49	20	
Cadmium	0.49	0.0020	0.5000	0	98.2	70	130	4.86	20	
Chromium	0.48	0.0060	0.5000	0	95.6	70	130	4.76	20	
Cobalt	0.48	0.0060	0.5000	0	95.5	70	130	4.77	20	
Copper	0.47	0.0060	0.5000	0	94.8	70	130	4.14	20	
Iron	0.49	0.020	0.5000	0	98.3	70	130	1.94	20	
Manganese	0.48	0.0020	0.5000	0	95.9	70	130	4.02	20	
Molybdenum	0.50	0.0080	0.5000	0	99.8	70	130	4.31	20	
Nickel	0.47	0.010	0.5000	0	94.0	70	130	5.38	20	
Silver	0.094	0.0050	0.1000	0	93.7	70	130	4.25	20	
Zinc	0.53	0.010	0.5000	0.01348	103	70	130	5.47	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB-60803** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **60803** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783847** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: **MSLLLCS-60803** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **60803** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783848** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	99.5	50	150			J
Arsenic	0.0010	0.0010	0.001000	0	101	50	150			
Lead	0.00050	0.00050	0.0005000	0	100	50	150			
Selenium	0.00071	0.0010	0.001000	0	71.0	50	150			J

Sample ID: **MSLCS-60803** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **60803** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783849** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.8	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.8	85	115			
Lead	0.012	0.00050	0.01250	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	96.8	85	115			
Thallium	0.012	0.00025	0.01250	0	97.6	85	115			

Sample ID: **MSLLLCS-TL-60803** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **60803** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783850** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	0.00024	0.00025	0.0002500	0	97.4	50	150			J

Sample ID: **2106895-001EMSLL** SampType: **MSLL** TestCode: **EPA 200.8: Metals**
Client ID: **OW-63** Batch ID: **60803** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784450** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	107	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **2106895-001EMSLL** SampType: **MSLL** TestCode: **EPA 200.8: Metals**
Client ID: **OW-63** Batch ID: **60803** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784450** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.038	0.0010	0.02500	0.009019	115	70	130			
Lead	0.011	0.00050	0.01250	0.0001153	85.3	70	130			
Selenium	0.029	0.0010	0.02500	0	116	70	130			
Thallium	0.011	0.00025	0.01250	0	85.6	70	130			

Sample ID: **2106895-001EMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **OW-63** Batch ID: **60803** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784451** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	109	70	130	2.02	20	
Arsenic	0.038	0.0010	0.02500	0.009019	116	70	130	0.432	20	
Lead	0.011	0.00050	0.01250	0.0001153	85.8	70	130	0.643	20	
Selenium	0.031	0.0010	0.02500	0	123	70	130	6.18	20	
Thallium	0.011	0.00025	0.01250	0	86.0	70	130	0.467	20	

Sample ID: **2106895-003FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-46** Batch ID: **60803** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784453** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	109	70	130			
Arsenic	0.032	0.0010	0.02500	0.001207	122	70	130			
Selenium	0.030	0.0010	0.02500	0.0004145	118	70	130			

Sample ID: **2106895-003FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-46** Batch ID: **60803** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784489** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.0025	0.01250	0.0006353	90.7	70	130			
Thallium	0.011	0.0012	0.01250	0	90.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B79234** RunNo: **79234**
Prep Date: Analysis Date: **6/21/2021** SeqNo: **2782259** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B79234** RunNo: **79234**
Prep Date: Analysis Date: **6/21/2021** SeqNo: **2782260** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	112	50	150			
Arsenic	0.00099	0.0010	0.001000	0	98.7	50	150			J
Selenium	0.0012	0.0010	0.001000	0	123	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B79234** RunNo: **79234**
Prep Date: Analysis Date: **6/21/2021** SeqNo: **2782261** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.025	0.0010	0.02500	0	101	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B79314** RunNo: **79314**
Prep Date: Analysis Date: **6/23/2021** SeqNo: **2785894** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B79314** RunNo: **79314**
Prep Date: Analysis Date: **6/23/2021** SeqNo: **2785895** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00092	0.0010	0.001000	0	91.7	50	150			J
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B79314** RunNo: **79314**
Prep Date: Analysis Date: **6/23/2021** SeqNo: **2785895** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.0011	0.0010	0.001000	0	105	50	150			
Thallium	0.00051	0.00025	0.0005000	0	102	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B79314** RunNo: **79314**
Prep Date: Analysis Date: **6/23/2021** SeqNo: **2785896** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.7	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.012	0.00050	0.01250	0	96.5	85	115			
Selenium	0.024	0.0010	0.02500	0	96.6	85	115			
Thallium	0.012	0.00025	0.01250	0	97.1	85	115			

Sample ID: **2106895-007FMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB 6/16/2021** Batch ID: **B79314** RunNo: **79314**
Prep Date: Analysis Date: **6/23/2021** SeqNo: **2785976** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.059	0.0025	0.06250	0	95.2	70	130			
Thallium	0.059	0.0012	0.06250	0	95.1	70	130			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B79446** RunNo: **79446**
Prep Date: Analysis Date: **6/29/2021** SeqNo: **2792590** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B79446** RunNo: **79446**
Prep Date: Analysis Date: **6/29/2021** SeqNo: **2792591** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	99.6	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B79446**	RunNo: **79446**
Prep Date:	Analysis Date: **6/29/2021**	SeqNo: **2792592** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB-60773** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **60773** RunNo: **79265**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783671** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-60773** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **60773** RunNo: **79265**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783672** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00011	0.00020	0.0001500	0	76.5	50	150			J

Sample ID: **LCS-60773** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **60773** RunNo: **79265**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783673** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.9	85	115			

Sample ID: **MB-61092** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **61092** RunNo: **79549**
Prep Date: **7/1/2021** Analysis Date: **7/2/2021** SeqNo: **2797411** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-61092** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **61092** RunNo: **79549**
Prep Date: **7/1/2021** Analysis Date: **7/2/2021** SeqNo: **2797412** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00013	0.00020	0.0001500	0	87.7	50	150			J

Sample ID: **LCS-61092** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **61092** RunNo: **79549**
Prep Date: **7/1/2021** Analysis Date: **7/2/2021** SeqNo: **2797413** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.00020	0.005000	0	94.0	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R79172** RunNo: **79172**
Prep Date: Analysis Date: **6/17/2021** SeqNo: **2778830** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R79172** RunNo: **79172**
Prep Date: Analysis Date: **6/17/2021** SeqNo: **2778832** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	101	90	110			
Chloride	4.7	0.50	5.000	0	93.4	90	110			
Nitrogen, Nitrite (As N)	0.93	0.10	1.000	0	93.1	90	110			
Bromide	2.4	0.10	2.500	0	95.9	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.6	90	110			
Phosphorus, Orthophosphate (As P	4.5	0.50	5.000	0	90.6	90	110			
Sulfate	9.6	0.50	10.00	0	96.2	90	110			

Sample ID: **2106895-007DMS** SampType: **ms** TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 6/16/2021** Batch ID: **R79172** RunNo: **79172**
Prep Date: Analysis Date: **6/17/2021** SeqNo: **2778844** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	73.3	111			
Chloride	4.8	0.50	5.000	0.4584	87.5	84.2	117			
Nitrogen, Nitrite (As N)	0.93	0.10	1.000	0	92.7	75.5	113			
Bromide	2.4	0.10	2.500	0	95.7	85.9	106			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.8	86.8	110			
Phosphorus, Orthophosphate (As P	4.5	0.50	5.000	0	90.5	70.5	118			
Sulfate	9.6	0.50	10.00	0	96.1	83.3	112			

Sample ID: **2106895-007DMSD** SampType: **msd** TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 6/16/2021** Batch ID: **R79172** RunNo: **79172**
Prep Date: Analysis Date: **6/17/2021** SeqNo: **2778845** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	73.3	111	1.68	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **2106895-007DMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 6/16/2021**	Batch ID: **R79172**	RunNo: **79172**
Prep Date:	Analysis Date: **6/17/2021**	SeqNo: **2778845** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0.4584	87.7	84.2	117	0.198	20	
Nitrogen, Nitrite (As N)	0.94	0.10	1.000	0	93.5	75.5	113	0.924	20	
Bromide	2.4	0.10	2.500	0	96.3	85.9	106	0.621	20	
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	100	86.8	110	0.556	20	
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	91.6	70.5	118	1.17	20	
Sulfate	9.7	0.50	10.00	0	96.9	83.3	112	0.800	20	

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A79426**	RunNo: **79426**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2792013** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A79426**	RunNo: **79426**
Prep Date:	Analysis Date: **6/28/2021**	SeqNo: **2792014** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.2	90	110			

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A79541**	RunNo: **79541**
Prep Date:	Analysis Date: **7/2/2021**	SeqNo: **2796767** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A79541**	RunNo: **79541**
Prep Date:	Analysis Date: **7/2/2021**	SeqNo: **2796768** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	97.4	90	110			

Qualifiers:

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J	Analyte detected below quantitation limits
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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB-60808**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **60808**	RunNo: **79282**
Prep Date: **6/22/2021**	Analysis Date: **6/22/2021**	SeqNo: **2784737** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-60808**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **60808**	RunNo: **79282**
Prep Date: **6/22/2021**	Analysis Date: **6/22/2021**	SeqNo: **2784739** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.094	0.010	0.1000	0	94.4	70	130			

Sample ID: **LCSD-60808**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **60808**	RunNo: **79282**
Prep Date: **6/22/2021**	Analysis Date: **6/22/2021**	SeqNo: **2784740** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	100	70	130	5.80	20	

Sample ID: **MB-60808**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **60808**	RunNo: **79282**
Prep Date: **6/22/2021**	Analysis Date: **6/22/2021**	SeqNo: **2784828** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

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B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **MB-60766** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **60766** RunNo: **79239**
Prep Date: **6/21/2021** Analysis Date: **6/23/2021** SeqNo: **2788022** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.032		0.03750		86.6	15	142			

Sample ID: **LCS-60766** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **60766** RunNo: **79239**
Prep Date: **6/21/2021** Analysis Date: **6/24/2021** SeqNo: **2788023** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.094	0.064	0.1875	0	50.0	21.1	126			
Surr: DNOP	0.016		0.01875		87.1	15	142			

Sample ID: **LCSD-60766** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **60766** RunNo: **79239**
Prep Date: **6/21/2021** Analysis Date: **6/24/2021** SeqNo: **2788025** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.083	0.064	0.1875	0	44.2	21.1	126	12.3	20	
Surr: DNOP	0.015		0.01875		81.0	15	142	0	0	

Sample ID: **MB-60769** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **60769** RunNo: **79239**
Prep Date: **6/21/2021** Analysis Date: **6/24/2021** SeqNo: **2788531** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.038		0.03750		101	15	142			

Sample ID: **LCS-60769** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **60769** RunNo: **79239**
Prep Date: **6/21/2021** Analysis Date: **6/24/2021** SeqNo: **2788532** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.096	0.064	0.1875	0	51.1	21.1	126			
Surr: DNOP	0.018		0.01875		97.9	15	142			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **LCSD-60769** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **60769** RunNo: **79239**
Prep Date: **6/21/2021** Analysis Date: **6/24/2021** SeqNo: **2788533** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.077	0.064	0.1875	0	41.3	21.1	126	21.3	20	R
Surr: DNOP	0.015		0.01875		81.0	15	142	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R79176**	RunNo: **79176**
Prep Date:	Analysis Date: **6/17/2021**	SeqNo: **2778936** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	95.6	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	96.1	70	130			
Surr: 1,2-Dichloroethane-d4	12		10.00		117	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R79176**	RunNo: **79176**
Prep Date:	Analysis Date: **6/17/2021**	SeqNo: **2778964** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

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ND	Not Detected at the Reporting Limit
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S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R79176**	RunNo: **79176**
Prep Date:	Analysis Date: **6/17/2021**	SeqNo: **2778964** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R79176**	RunNo: **79176**
Prep Date:	Analysis Date: **6/17/2021**	SeqNo: **2778964** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	10		10.00		99.8	70	130			
Surr: Toluene-d8	11		10.00		107	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R79222**	RunNo: **79222**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2781505** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	108	70	130			
Toluene	21	1.0	20.00	0	105	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	97.9	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	97.5	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		111	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **2106895-006ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-27**	Batch ID: **R79222**	RunNo: **79222**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2781539** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	109	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	99.0	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	12		10.00		120	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	12		10.00		118	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Qualifiers:

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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **2106895-006amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-27**	Batch ID: **R79222**	RunNo: **79222**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2781540** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130	2.03	20	
Toluene	19	1.0	20.00	0	94.9	70	130	7.23	20	
Chlorobenzene	19	1.0	20.00	0	97.4	70	130	4.32	20	
1,1-Dichloroethene	19	1.0	20.00	0	95.8	70	130	3.35	20	
Trichloroethene (TCE)	20	1.0	20.00	0	98.9	70	130	2.45	20	
Surr: 1,2-Dichloroethane-d4	12		10.00		124	70	130	0	0	
Surr: 4-Bromofluorobenzene	11		10.00		112	70	130	0	0	
Surr: Dibromofluoromethane	12		10.00		119	70	130	0	0	
Surr: Toluene-d8	10		10.00		99.6	70	130	0	0	

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R79222**	RunNo: **79222**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2781550** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

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S	% Recovery outside of range due to dilution or matrix
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J	Analyte detected below quantitation limits
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RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R79222**	RunNo: **79222**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2781550** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R79222**	RunNo: **79222**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2781550** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		105	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **mb-60727**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **60727**	RunNo: **79281**	
Prep Date: **6/18/2021**	Analysis Date: **6/22/2021**	SeqNo: **2784700**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Azobenzene	ND	5.0								
Benzoic acid	ND	5.0								
Benzyl alcohol	ND	5.0								
Bis(2-chloroethoxy)methane	ND	5.0								
Bis(2-chloroethyl)ether	ND	5.0								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	5.3	10								J
4-Bromophenyl phenyl ether	ND	5.0								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
2-Chloronaphthalene	ND	5.0								
2-Chlorophenol	ND	5.0								
4-Chlorophenyl phenyl ether	ND	5.0								
Di-n-butyl phthalate	6.8	10								J
Di-n-octyl phthalate	ND	20								
Dibenzofuran	ND	5.0								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
3,3´-Dichlorobenzidine	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	5.0								
4,6-Dinitro-2-methylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	5.0								
Hexachlorobenzene	ND	5.0								
Hexachlorobutadiene	ND	5.0								
Hexachlorocyclopentadiene	ND	5.0								
Hexachloroethane	ND	5.0								
Isophorone	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
N-Nitrosodi-n-propylamine	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **mb-60727** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **60727** RunNo: **79281**
Prep Date: **6/18/2021** Analysis Date: **6/22/2021** SeqNo: **2784700** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	5.0								
2-Nitroaniline	ND	5.0								
3-Nitroaniline	ND	5.0								
4-Nitroaniline	ND	5.0								
Nitrobenzene	ND	5.0								
2-Nitrophenol	ND	5.0								
4-Nitrophenol	ND	5.0								
Pentachlorophenol	ND	20								
Phenol	ND	5.0								
Pyridine	ND	5.0								
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	160		200.0		79.2	15	88.8			
Surr: Phenol-d5	130		200.0		66.1	15	71.9			
Surr: 2,4,6-Tribromophenol	200		200.0		101	15	97.4			S
Surr: Nitrobenzene-d5	85		100.0		85.4	15	117			
Surr: 2-Fluorobiphenyl	82		100.0		81.8	15	100			
Surr: 4-Terphenyl-d14	130		100.0		127	15	120			S

Sample ID: **lcs-60727** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **60727** RunNo: **79281**
Prep Date: **6/18/2021** Analysis Date: **6/22/2021** SeqNo: **2784701** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	170	5.0	200.0	0	86.0	28.3	103			
2-Chlorophenol	170	5.0	200.0	0	84.9	29.3	105			
1,4-Dichlorobenzene	73	5.0	100.0	0	73.4	15	87.6			
2,4-Dinitrotoluene	73	5.0	100.0	0	72.8	23.6	90.9			
N-Nitrosodi-n-propylamine	81	5.0	100.0	0	80.9	23.1	94.6			
4-Nitrophenol	120	5.0	200.0	0	58.6	15	77			
Pentachlorophenol	180	20	200.0	0	90.9	21	111			
Phenol	110	5.0	200.0	0	54.9	16.8	70.5			
1,2,4-Trichlorobenzene	74	5.0	100.0	0	73.6	15	88.2			
Surr: 2-Fluorophenol	140		200.0		67.6	15	88.8			
Surr: Phenol-d5	110		200.0		56.3	15	71.9			
Surr: 2,4,6-Tribromophenol	180		200.0		91.3	15	97.4			
Surr: Nitrobenzene-d5	80		100.0		80.2	15	117			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **lcs-60727** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **60727** RunNo: **79281**
Prep Date: **6/18/2021** Analysis Date: **6/22/2021** SeqNo: **2784701** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	78		100.0		77.6	15	100			
Surr: 4-Terphenyl-d14	120		100.0		116	15	120			

Sample ID: **lcsd-60727** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **60727** RunNo: **79281**
Prep Date: **6/18/2021** Analysis Date: **6/22/2021** SeqNo: **2784702** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	180	5.0	200.0	0	88.7	28.3	103	3.16	44.7	
2-Chlorophenol	190	5.0	200.0	0	92.8	29.3	105	8.95	35.6	
1,4-Dichlorobenzene	76	5.0	100.0	0	75.9	15	87.6	3.27	30.4	
2,4-Dinitrotoluene	75	5.0	100.0	0	75.0	23.6	90.9	3.01	53.1	
N-Nitrosodi-n-propylamine	84	5.0	100.0	0	84.3	23.1	94.6	4.10	31.1	
4-Nitrophenol	120	5.0	200.0	0	58.7	15	77	0.206	52.4	
Pentachlorophenol	190	20	200.0	0	94.2	21	111	3.53	71.6	
Phenol	110	5.0	200.0	0	57.5	16.8	70.5	4.69	37.2	
1,2,4-Trichlorobenzene	75	5.0	100.0	0	75.0	15	88.2	1.87	31.8	
Surr: 2-Fluorophenol	120		200.0		58.7	15	88.8	0	0	
Surr: Phenol-d5	89		200.0		44.7	15	71.9	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		81.6	15	97.4	0	0	
Surr: Nitrobenzene-d5	74		100.0		74.2	15	117	0	0	
Surr: 2-Fluorobiphenyl	73		100.0		73.4	15	100	0	0	
Surr: 4-Terphenyl-d14	120		100.0		116	15	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **mb-60740** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **60740** RunNo: **79280**
Prep Date: **6/18/2021** Analysis Date: **6/22/2021** SeqNo: **2784683** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthylene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.10								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.10								
Benzo(g,h,i)perylene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	1.9		4.000		46.5	26.3	112			
Surr: 2,4,6-Tribromophenol	3.5		8.000		43.5	27.7	118			
Surr: 2-Fluorobiphenyl	1.4		4.000		35.0	21.1	110			
Surr: 4-Terphenyl-d14	2.1		4.000		52.0	17.6	167			

Sample ID: **lcs-60740** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **60740** RunNo: **79280**
Prep Date: **6/18/2021** Analysis Date: **6/22/2021** SeqNo: **2784684** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.1	0.10	2.000	0	56.0	26.5	90.9			
1-Methylnaphthalene	1.1	0.10	2.000	0	55.0	27.9	88.2			
2-Methylnaphthalene	1.1	0.10	2.000	0	54.0	29.2	87.5			
Acenaphthylene	1.3	0.10	2.000	0	65.0	30	92.9			
Acenaphthene	1.3	0.10	2.000	0	63.0	25.6	93.9			
Fluorene	1.3	0.10	2.000	0	67.0	27.4	95.1			
Phenanthrene	1.5	0.10	2.000	0	75.0	25.1	104			
Anthracene	1.5	0.10	2.000	0	73.0	30.1	100			
Fluoranthene	1.8	0.20	2.000	0	91.0	41.6	126			
Pyrene	1.8	0.20	2.000	0	92.0	34.5	112			
Benz(a)anthracene	1.9	0.10	2.000	0	96.0	43.9	132			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **lcs-60740**	SampType: **LCS**	TestCode: **EPA Method 8270SIM**							
Client ID: **LCSW**	Batch ID: **60740**	RunNo: **79280**							
Prep Date: **6/18/2021**	Analysis Date: **6/22/2021**	SeqNo: **2784684**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	1.8	0.10	2.000	0	92.0	39.8	118			
Benzo(b)fluoranthene	2.0	0.10	2.000	0	101	37.2	134			
Benzo(k)fluoranthene	1.9	0.10	2.000	0	95.0	43.8	122			
Benzo(a)pyrene	1.8	0.070	2.000	0	90.0	36.6	122			
Dibenz(a,h)anthracene	2.0	0.10	2.000	0	98.0	35.5	129			
Benzo(g,h,i)perylene	1.9	0.10	2.000	0	94.0	39.4	120			
Indeno(1,2,3-cd)pyrene	2.1	0.30	2.000	0	107	24.9	150			
Surr: Nitrobenzene-d5	3.4		5.000		67.6	26.3	112			
Surr: 2,4,6-Tribromophenol	6.0		10.00		59.8	27.7	118			
Surr: 2-Fluorobiphenyl	2.4		5.000		48.0	21.1	110			
Surr: 4-Terphenyl-d14	4.1		5.000		81.6	17.6	167			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G79176** RunNo: **79176**
Prep Date: Analysis Date: **6/17/2021** SeqNo: **2778967** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G79176** RunNo: **79176**
Prep Date: Analysis Date: **6/17/2021** SeqNo: **2778992** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G79222** RunNo: **79222**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2781677** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.53	0.050	0.5000	0	106	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			

Sample ID: **2106895-006AMS** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-27** Batch ID: **G79222** RunNo: **79222**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2781681** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0.02900	97.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.7	70	130			

Sample ID: **2106895-006AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-27** Batch ID: **G79222** RunNo: **79222**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2781683** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0.02900	90.4	70	130	6.83	20	
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G79222** RunNo: **79222**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2781695** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106895**
13-Jul-21

Client: Marathon
Project: 2021 GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G79222**	RunNo: **79222**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2781695** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	9.9		10.00		98.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2106895** RcptNo: **1**

Received By: **Sean Livingston** **6/16/2021 4:15:00 PM** Sean Livingston

Completed By: **Desiree Dominguez** **6/16/2021 4:31:51 PM** DD

Reviewed By: JR 6/17/21

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
   Samples were collected the same day and chilled.
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 21 (<2 or >12 unless noted)
Adjusted? NO
Checked by: SPA 6.17.21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	7.8	Good				
2	4.1	Good				
3	2.8	Good				
4	5.2	Good				

Released to Imaging: 7/13/2022 10:32:25 AM

Received by OCD: 3/25/2022 3:35:30 PM

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Petroleum Company	☒ Standard ☐ Rush
Mailing Address: 92 Giant Crossing Rd. Jamestown, NM 87347	Project Name: 2021 GW Sampling - 1st Quarter
Phone #: 808-640-1823	Project #: 697-080-001
Email or Fax#: bmcloughlin@trihydro.com	Project Manager: Brian McLoughlin
QA/QC Package: **Standard** ☐ Level 4 (Full Validation)	Sampler:
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	On Ice: ☑ Yes ☐ No
EDD (Type)	# of Coolers: 4
	Cooler Temp(including CF): See remarks

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2106895	8260 -VOCs	WQCC metals	GRO/DRO extended	Major Cations / Anions	Nitrate/Nitrite	8011 EDB	SVOC (includes 1,4 Dioxane on reques	1,4 Dioxane only	BTEX+MTBE	BOD	COD	Cyanide	TDS/TSS	Gen Chem	PFAS	e-coli
6/15	14:20	water	OW-63			-001	X	X	X	X			X								X	
6/15	14:20	water	FB (PFAS)			-002	X															
6/16	9:20	water	MKTF-46			-003	X	X	X	X		X	X									
6/16	10:25	water	MKTF-28			-004	X	X	X	X			X									
6/16	10:25	water	FB 6/16/2021			-005	X															
6/16	10:50	water	MKTF-27			-006	X	X	X	X		X	X									
6/16	10:25	water	EB 6/16/2021			-007	X	X	X	X			X									
6/16	11:20	water	MKTF-24			-008	X	X	X	X		X	X									
6/16		water	DUP 6/16/2021			-009	X	X	X	X		X	X									
		water																				
		water																				
		water																				

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
6/16	13:30		Sca	courier	6/16/21	16:15
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks: Seperate cooler for PFAS

7.9 - 0.1 = 7.8°C
4.1 - 0.1 = 4.0°C
2.8 - 0.1 = 2.7°C
5.2 - 0.1 = 5.1°C

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

As per Brian - updated project name to 2nd Quarter. MMG 7/13/21

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

July 26, 2021

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL:
FAX

RE: GW Sampling 2nd Quarter OrderNo.: 2106976

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 9 sample(s) on 6/17/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 8:20:00 AM
Lab ID: 2106976-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	1400	11	50		µg/L	50	6/24/2021 2:14:44 PM	R79410
Toluene	25	1.0	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
Ethylbenzene	340	1.1	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
Methyl tert-butyl ether (MTBE)	29	2.0	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,2,4-Trimethylbenzene	100	0.61	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,3,5-Trimethylbenzene	1.6	0.91	5.0	J	µg/L	5	6/24/2021 3:09:22 PM	R79410
1,2-Dichloroethane (EDC)	4.0	1.1	5.0	J	µg/L	5	6/24/2021 3:09:22 PM	R79410
1,2-Dibromoethane (EDB)	ND	1.5	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
Naphthalene	5.4	1.4	10	J	µg/L	5	6/24/2021 3:09:22 PM	R79410
1-Methylnaphthalene	27	4.2	20		µg/L	5	6/24/2021 3:09:22 PM	R79410
2-Methylnaphthalene	ND	3.5	20		µg/L	5	6/24/2021 3:09:22 PM	R79410
Acetone	ND	12	50		µg/L	5	6/24/2021 3:09:22 PM	R79410
Bromobenzene	ND	1.4	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
Bromodichloromethane	ND	1.0	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
Bromoform	ND	1.6	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
Bromomethane	ND	7.8	15		µg/L	5	6/24/2021 3:09:22 PM	R79410
2-Butanone	39	5.6	50	J	µg/L	5	6/24/2021 3:09:22 PM	R79410
Carbon disulfide	ND	2.2	50		µg/L	5	6/24/2021 3:09:22 PM	R79410
Carbon Tetrachloride	ND	0.88	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
Chlorobenzene	ND	0.68	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
Chloroethane	3.4	1.9	10	J	µg/L	5	6/24/2021 3:09:22 PM	R79410
Chloroform	ND	0.67	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
Chloromethane	3.3	2.0	15	J	µg/L	5	6/24/2021 3:09:22 PM	R79410
2-Chlorotoluene	ND	0.66	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
4-Chlorotoluene	ND	2.6	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
cis-1,2-DCE	ND	1.9	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
cis-1,3-Dichloropropene	ND	1.8	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,2-Dibromo-3-chloropropane	ND	2.9	10		µg/L	5	6/24/2021 3:09:22 PM	R79410
Dibromochloromethane	ND	1.4	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
Dibromomethane	ND	1.5	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,2-Dichlorobenzene	ND	0.77	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,3-Dichlorobenzene	ND	0.81	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,4-Dichlorobenzene	ND	1.0	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
Dichlorodifluoromethane	ND	2.2	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,1-Dichloroethane	12	1.4	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,1-Dichloroethene	2.7	0.65	5.0	J	µg/L	5	6/24/2021 3:09:22 PM	R79410
1,2-Dichloropropane	ND	0.67	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,3-Dichloropropane	ND	0.90	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
2,2-Dichloropropane	ND	1.3	10		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,1-Dichloropropene	ND	0.90	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 8:20:00 AM
Lab ID: 2106976-001A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	1.6	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
2-Hexanone	ND	9.0	50		µg/L	5	6/24/2021 3:09:22 PM	R79410
Isopropylbenzene	20	0.91	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
4-Isopropyltoluene	1.2	1.0	5.0	J	µg/L	5	6/24/2021 3:09:22 PM	R79410
4-Methyl-2-pentanone	ND	5.6	50		µg/L	5	6/24/2021 3:09:22 PM	R79410
Methylene Chloride	2.9	2.0	15	J	µg/L	5	6/24/2021 3:09:22 PM	R79410
n-Butylbenzene	4.2	1.3	15	J	µg/L	5	6/24/2021 3:09:22 PM	R79410
n-Propylbenzene	49	0.91	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
sec-Butylbenzene	3.4	3.0	5.0	J	µg/L	5	6/24/2021 3:09:22 PM	R79410
Styrene	ND	0.65	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
tert-Butylbenzene	ND	1.2	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,1,1,2-Tetrachloroethane	ND	1.3	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,1,2,2-Tetrachloroethane	ND	1.4	10		µg/L	5	6/24/2021 3:09:22 PM	R79410
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
trans-1,2-DCE	ND	2.4	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
trans-1,3-Dichloropropene	ND	1.7	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,2,3-Trichlorobenzene	ND	0.67	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,2,4-Trichlorobenzene	ND	1.2	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,1,1-Trichloroethane	ND	1.5	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,1,2-Trichloroethane	1.5	0.94	5.0	J	µg/L	5	6/24/2021 3:09:22 PM	R79410
Trichloroethene (TCE)	ND	1.0	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
Trichlorofluoromethane	ND	0.46	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
1,2,3-Trichloropropane	ND	2.2	10		µg/L	5	6/24/2021 3:09:22 PM	R79410
Vinyl chloride	14	0.98	5.0		µg/L	5	6/24/2021 3:09:22 PM	R79410
Xylenes, Total	63	2.8	7.5		µg/L	5	6/24/2021 3:09:22 PM	R79410
Surr: 1,2-Dichloroethane-d4	98.9	0	70-130		%Rec	5	6/24/2021 3:09:22 PM	R79410
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	5	6/24/2021 3:09:22 PM	R79410
Surr: Dibromofluoromethane	96.5	0	70-130		%Rec	5	6/24/2021 3:09:22 PM	R79410
Surr: Toluene-d8	105	0	70-130		%Rec	5	6/24/2021 3:09:22 PM	R79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	5.1	0.14	0.25		mg/L	5	6/24/2021 3:09:22 PM	G79410
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	5	6/24/2021 3:09:22 PM	G79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 8:20:00 AM
Lab ID: 2106976-001B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	0.0080	0.0034	0.0093	J	µg/L	1	6/23/2021 3:05:06 AM	60809

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 8:20:00 AM
Lab ID: 2106976-001C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	1.8	0.016	0.064		mg/L	1	6/24/2021 8:08:48 AM	60769
Motor Oil Range Organics (MRO)	0.061	0.052	0.080	J	mg/L	1	6/24/2021 8:08:48 AM	60769
Surr: DNOP	87.0	0	15-142		%Rec	1	6/24/2021 8:08:48 AM	60769

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 8:20:00 AM
Lab ID: 2106976-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Azobenzene	ND	0.55	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Benzoic acid	ND	1.1	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Benzyl alcohol	ND	0.68	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Bis(2-ethylhexyl)phthalate	5.7	4.5	10	J	µg/L	1	6/24/2021 12:17:20 PM	60820
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Carbazole	ND	0.56	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
4-Chloroaniline	ND	0.53	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
2-Chlorophenol	ND	0.62	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	6/24/2021 12:17:20 PM	60820
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	6/24/2021 12:17:20 PM	60820
Dibenzofuran	ND	0.38	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Diethyl phthalate	ND	3.9	10		µg/L	1	6/24/2021 12:17:20 PM	60820
Dimethyl phthalate	ND	2.0	10		µg/L	1	6/24/2021 12:17:20 PM	60820
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Hexachloroethane	ND	0.45	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Isophorone	ND	0.40	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
2-Methylphenol	ND	0.51	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 8:20:00 AM
Lab ID: 2106976-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
2-Nitroaniline	ND	0.31	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
3-Nitroaniline	ND	1.6	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
4-Nitroaniline	ND	0.47	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Nitrobenzene	ND	0.51	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
2-Nitrophenol	ND	0.47	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
4-Nitrophenol	ND	0.28	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Pentachlorophenol	ND	0.59	20		µg/L	1	6/24/2021 12:17:20 PM	60820
Phenol	1.9	0.33	5.0	J	µg/L	1	6/24/2021 12:17:20 PM	60820
Pyridine	ND	0.93	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	6/24/2021 12:17:20 PM	60820
Surr: 2-Fluorophenol	0	0	15-88.8	S	%Rec	1	6/24/2021 12:17:20 PM	60820
Surr: Phenol-d5	0	0	15-71.9	S	%Rec	1	6/24/2021 12:17:20 PM	60820
Surr: 2,4,6-Tribromophenol	0	0	15-97.4	S	%Rec	1	6/24/2021 12:17:20 PM	60820
Surr: Nitrobenzene-d5	59.1	0	15-117		%Rec	1	6/24/2021 12:17:20 PM	60820
Surr: 2-Fluorobiphenyl	59.4	0	15-100		%Rec	1	6/24/2021 12:17:20 PM	60820
Surr: 4-Terphenyl-d14	100	0	15-120		%Rec	1	6/24/2021 12:17:20 PM	60820
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	2.5	0.034	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
1-Methylnaphthalene	15	0.024	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
Acenaphthylene	ND	0.043	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
Acenaphthene	0.48	0.031	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
Fluorene	0.48	0.031	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
Phenanthrene	0.16	0.057	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
Anthracene	ND	0.034	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
Fluoranthene	ND	0.10	0.20		µg/L	1	6/24/2021 7:10:00 AM	60807
Pyrene	0.26	0.16	0.20		µg/L	1	6/24/2021 7:10:00 AM	60807
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
Chrysene	ND	0.024	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	6/24/2021 7:10:00 AM	60807
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	6/24/2021 7:10:00 AM	60807
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	6/24/2021 7:10:00 AM	60807
Surr: Nitrobenzene-d5	11.0	0	26.3-112	S	%Rec	1	6/24/2021 7:10:00 AM	60807
Surr: 2-Fluorobiphenyl	50.0	0	21.1-110		%Rec	1	6/24/2021 7:10:00 AM	60807

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 8:20:00 AM
Lab ID: 2106976-001D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	89.5	0	17.6-167		%Rec	1	6/24/2021 7:10:00 AM	60807

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 8:20:00 AM
Lab ID: 2106976-001E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.28	0.50		mg/L	5	6/18/2021 2:49:54 PM	R79216
Chloride	3000	120	250	*	mg/L	500	6/30/2021 4:34:18 PM	R79498
Nitrogen, Nitrite (As N)	ND	0.29	2.0		mg/L	20	6/18/2021 3:02:15 PM	R79216
Bromide	1.3	0.25	0.50		mg/L	5	6/18/2021 2:49:54 PM	R79216
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	6/18/2021 2:49:54 PM	R79216
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/18/2021 2:49:54 PM	R79216
Sulfate	100	1.2	2.5		mg/L	5	6/18/2021 2:49:54 PM	R79216

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 8:20:00 AM
Lab ID: 2106976-001F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.40	0.0074	0.020	*	mg/L	1	6/22/2021 1:55:35 PM	60804
Barium	0.39	0.0016	0.0030		mg/L	1	6/22/2021 1:55:35 PM	60804
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 1:55:35 PM	60804
Boron	0.85	0.0074	0.040		mg/L	1	6/22/2021 1:55:35 PM	60804
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 1:55:35 PM	60804
Calcium	640	2.3	20		mg/L	20	6/22/2021 1:58:34 PM	60804
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 1:55:35 PM	60804
Cobalt	0.0080	0.0024	0.0060		mg/L	1	6/22/2021 1:55:35 PM	60804
Copper	ND	0.0047	0.0060		mg/L	1	6/22/2021 1:55:35 PM	60804
Iron	2.1	0.064	0.25	*	mg/L	5	6/22/2021 1:56:58 PM	60804
Magnesium	110	0.34	5.0		mg/L	5	6/22/2021 1:56:58 PM	60804
Manganese	5.6	0.016	0.040	*	mg/L	20	6/22/2021 1:58:34 PM	60804
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/22/2021 1:55:35 PM	60804
Nickel	0.021	0.0033	0.010		mg/L	1	6/22/2021 1:55:35 PM	60804
Potassium	4.7	0.16	1.0		mg/L	1	6/22/2021 1:55:35 PM	60804
Silver	0.0030	0.0013	0.0050	J	mg/L	1	6/22/2021 1:55:35 PM	60804
Sodium	1400	3.7	20		mg/L	20	6/22/2021 1:58:34 PM	60804
Zinc	ND	0.0064	0.010		mg/L	1	6/22/2021 1:55:35 PM	60804
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/22/2021 3:39:29 PM	60804
Arsenic	0.0010	0.00063	0.0050	J	mg/L	5	6/24/2021 12:22:26 PM	60804
Lead	0.00062	0.00031	0.0025	J	mg/L	5	6/22/2021 5:10:00 PM	60804
Selenium	ND	0.0019	0.0050		mg/L	5	6/24/2021 12:22:26 PM	60804
Thallium	ND	0.0012	0.0012		mg/L	5	6/22/2021 5:10:00 PM	60804
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 2:09:01 PM	60773

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-2
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 8:20:00 AM
Lab ID: 2106976-001G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/18/2021 12:16:47 PM	B79194
Barium	0.37	0.0011	0.0020		mg/L	1	6/18/2021 12:16:47 PM	B79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 12:16:47 PM	B79194
Boron	0.79	0.0067	0.040		mg/L	1	6/18/2021 12:16:47 PM	B79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 12:16:47 PM	B79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 12:16:47 PM	B79194
Cobalt	0.0080	0.0024	0.0060		mg/L	1	6/18/2021 12:16:47 PM	B79194
Copper	ND	0.0035	0.0060		mg/L	1	6/18/2021 12:16:47 PM	B79194
Iron	1.0	0.10	0.20	*	mg/L	10	6/18/2021 12:18:12 PM	B79194
Manganese	5.4	0.0058	0.020	*	mg/L	10	6/18/2021 12:18:12 PM	B79194
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/18/2021 12:16:47 PM	B79194
Nickel	0.020	0.0033	0.010		mg/L	1	6/18/2021 12:16:47 PM	B79194
Silver	0.0025	0.0013	0.0050	J	mg/L	1	6/18/2021 12:16:47 PM	B79194
Zinc	0.011	0.0060	0.010		mg/L	1	6/18/2021 12:16:47 PM	B79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/23/2021 5:18:44 PM	C79314
Arsenic	0.00088	0.00061	0.0050	J	mg/L	5	6/23/2021 5:18:44 PM	C79314
Lead	ND	0.00028	0.0025		mg/L	5	6/23/2021 5:18:44 PM	C79314
Selenium	ND	0.0017	0.0050		mg/L	5	6/23/2021 5:18:44 PM	C79314
Thallium	ND	0.0012	0.0012		mg/L	5	6/23/2021 5:18:44 PM	C79314
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 11:08:59 AM	61092

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:10:00 AM
Lab ID: 2106976-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	1.4	1.1	5.0	J	µg/L	5	6/24/2021 2:42:06 PM	R79410
Toluene	ND	1.0	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Ethylbenzene	ND	1.1	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Methyl tert-butyl ether (MTBE)	420	2.0	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,2,4-Trimethylbenzene	ND	0.61	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,3,5-Trimethylbenzene	ND	0.91	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,2-Dichloroethane (EDC)	17	1.1	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,2-Dibromoethane (EDB)	ND	1.5	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Naphthalene	ND	1.4	10		µg/L	5	6/24/2021 2:42:06 PM	R79410
1-Methylnaphthalene	ND	4.2	20		µg/L	5	6/24/2021 2:42:06 PM	R79410
2-Methylnaphthalene	ND	3.5	20		µg/L	5	6/24/2021 2:42:06 PM	R79410
Acetone	ND	12	50		µg/L	5	6/24/2021 2:42:06 PM	R79410
Bromobenzene	ND	1.4	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Bromodichloromethane	ND	1.0	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Bromoform	ND	1.6	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Bromomethane	ND	7.8	15		µg/L	5	6/24/2021 2:42:06 PM	R79410
2-Butanone	17	5.6	50	J	µg/L	5	6/24/2021 2:42:06 PM	R79410
Carbon disulfide	ND	2.2	50		µg/L	5	6/24/2021 2:42:06 PM	R79410
Carbon Tetrachloride	ND	0.88	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Chlorobenzene	ND	0.68	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Chloroethane	4.8	1.9	10	J	µg/L	5	6/24/2021 2:42:06 PM	R79410
Chloroform	ND	0.67	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Chloromethane	2.1	2.0	15	J	µg/L	5	6/24/2021 2:42:06 PM	R79410
2-Chlorotoluene	ND	0.66	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
4-Chlorotoluene	ND	2.6	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
cis-1,2-DCE	3.8	1.9	5.0	J	µg/L	5	6/24/2021 2:42:06 PM	R79410
cis-1,3-Dichloropropene	ND	1.8	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,2-Dibromo-3-chloropropane	ND	2.9	10		µg/L	5	6/24/2021 2:42:06 PM	R79410
Dibromochloromethane	ND	1.4	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Dibromomethane	ND	1.5	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,2-Dichlorobenzene	ND	0.77	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,3-Dichlorobenzene	ND	0.81	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,4-Dichlorobenzene	ND	1.0	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Dichlorodifluoromethane	ND	2.2	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,1-Dichloroethane	41	1.4	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,1-Dichloroethene	54	0.65	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,2-Dichloropropane	ND	0.67	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,3-Dichloropropane	ND	0.90	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
2,2-Dichloropropane	ND	1.3	10		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,1-Dichloropropene	ND	0.90	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:10:00 AM
Lab ID: 2106976-002A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	1.6	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
2-Hexanone	ND	9.0	50		µg/L	5	6/24/2021 2:42:06 PM	R79410
Isopropylbenzene	ND	0.91	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
4-Isopropyltoluene	ND	1.0	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
4-Methyl-2-pentanone	ND	5.6	50		µg/L	5	6/24/2021 2:42:06 PM	R79410
Methylene Chloride	3.4	2.0	15	J	µg/L	5	6/24/2021 2:42:06 PM	R79410
n-Butylbenzene	ND	1.3	15		µg/L	5	6/24/2021 2:42:06 PM	R79410
n-Propylbenzene	ND	0.91	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
sec-Butylbenzene	ND	3.0	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Styrene	ND	0.65	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
tert-Butylbenzene	ND	1.2	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,1,1,2-Tetrachloroethane	ND	1.3	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,1,2,2-Tetrachloroethane	ND	1.4	10		µg/L	5	6/24/2021 2:42:06 PM	R79410
Tetrachloroethene (PCE)	ND	1.8	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
trans-1,2-DCE	ND	2.4	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
trans-1,3-Dichloropropene	ND	1.7	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,2,3-Trichlorobenzene	ND	0.67	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,2,4-Trichlorobenzene	ND	1.2	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,1,1-Trichloroethane	3.3	1.5	5.0	J	µg/L	5	6/24/2021 2:42:06 PM	R79410
1,1,2-Trichloroethane	2.6	0.94	5.0	J	µg/L	5	6/24/2021 2:42:06 PM	R79410
Trichloroethene (TCE)	5.9	1.0	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Trichlorofluoromethane	ND	0.46	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
1,2,3-Trichloropropane	ND	2.2	10		µg/L	5	6/24/2021 2:42:06 PM	R79410
Vinyl chloride	ND	0.98	5.0		µg/L	5	6/24/2021 2:42:06 PM	R79410
Xylenes, Total	ND	2.8	7.5		µg/L	5	6/24/2021 2:42:06 PM	R79410
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%Rec	5	6/24/2021 2:42:06 PM	R79410
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	5	6/24/2021 2:42:06 PM	R79410
Surr: Dibromofluoromethane	106	0	70-130		%Rec	5	6/24/2021 2:42:06 PM	R79410
Surr: Toluene-d8	105	0	70-130		%Rec	5	6/24/2021 2:42:06 PM	R79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.23	0.14	0.25	J	mg/L	5	6/24/2021 2:42:06 PM	G79410
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	5	6/24/2021 2:42:06 PM	G79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:10:00 AM
Lab ID: 2106976-002B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	0.0036	0.0034	0.0094	J	µg/L	1	6/23/2021 3:20:24 AM	60809

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Qualifiers:

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Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:10:00 AM
Lab ID: 2106976-002C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.20	0.016	0.064		mg/L	1	6/24/2021 8:32:28 AM	60769
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/24/2021 8:32:28 AM	60769
Surr: DNOP	91.2	0	15-142		%Rec	1	6/24/2021 8:32:28 AM	60769

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:10:00 AM
Lab ID: 2106976-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Azobenzene	ND	0.55	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Benzoic acid	ND	1.1	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Benzyl alcohol	ND	0.68	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Bis(2-ethylhexyl)phthalate	6.3	4.5	10	J	µg/L	1	6/24/2021 12:59:34 PM	60820
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Carbazole	ND	0.56	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
4-Chloroaniline	ND	0.53	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
2-Chlorophenol	ND	0.62	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	6/24/2021 12:59:34 PM	60820
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	6/24/2021 12:59:34 PM	60820
Dibenzofuran	ND	0.38	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Diethyl phthalate	ND	3.9	10		µg/L	1	6/24/2021 12:59:34 PM	60820
Dimethyl phthalate	ND	2.0	10		µg/L	1	6/24/2021 12:59:34 PM	60820
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Hexachloroethane	ND	0.45	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Isophorone	ND	0.40	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
2-Methylphenol	ND	0.51	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820

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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:10:00 AM
Lab ID: 2106976-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
2-Nitroaniline	ND	0.31	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
3-Nitroaniline	ND	1.6	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
4-Nitroaniline	ND	0.47	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Nitrobenzene	ND	0.51	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
2-Nitrophenol	ND	0.47	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
4-Nitrophenol	ND	0.28	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Pentachlorophenol	ND	0.59	20		µg/L	1	6/24/2021 12:59:34 PM	60820
Phenol	ND	0.33	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Pyridine	ND	0.93	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	6/24/2021 12:59:34 PM	60820
Surr: 2-Fluorophenol	47.9	0	15-88.8		%Rec	1	6/24/2021 12:59:34 PM	60820
Surr: Phenol-d5	39.2	0	15-71.9		%Rec	1	6/24/2021 12:59:34 PM	60820
Surr: 2,4,6-Tribromophenol	68.8	0	15-97.4		%Rec	1	6/24/2021 12:59:34 PM	60820
Surr: Nitrobenzene-d5	58.2	0	15-117		%Rec	1	6/24/2021 12:59:34 PM	60820
Surr: 2-Fluorobiphenyl	60.3	0	15-100		%Rec	1	6/24/2021 12:59:34 PM	60820
Surr: 4-Terphenyl-d14	84.8	0	15-120		%Rec	1	6/24/2021 12:59:34 PM	60820
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
Acenaphthylene	ND	0.043	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
Acenaphthene	ND	0.031	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
Fluorene	ND	0.031	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
Phenanthrene	ND	0.057	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
Anthracene	ND	0.034	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
Fluoranthene	ND	0.10	0.20		µg/L	1	6/24/2021 7:54:00 AM	60807
Pyrene	ND	0.16	0.20		µg/L	1	6/24/2021 7:54:00 AM	60807
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
Chrysene	ND	0.024	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	6/24/2021 7:54:00 AM	60807
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	6/24/2021 7:54:00 AM	60807
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	6/24/2021 7:54:00 AM	60807
Surr: Nitrobenzene-d5	90.0	0	26.3-112		%Rec	1	6/24/2021 7:54:00 AM	60807
Surr: 2-Fluorobiphenyl	82.5	0	21.1-110		%Rec	1	6/24/2021 7:54:00 AM	60807

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Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:10:00 AM
Lab ID: 2106976-002D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	113	0	17.6-167		%Rec	1	6/24/2021 7:54:00 AM	60807

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Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:10:00 AM
Lab ID: 2106976-002E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.28	0.50		mg/L	5	6/18/2021 3:14:37 PM	R79216
Chloride	520	12	25	*	mg/L	50	6/30/2021 4:47:10 PM	R79498
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/18/2021 3:14:37 PM	R79216
Bromide	1.4	0.25	0.50		mg/L	5	6/18/2021 3:14:37 PM	R79216
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	6/18/2021 3:14:37 PM	R79216
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/18/2021 3:14:37 PM	R79216
Sulfate	64	1.2	2.5		mg/L	5	6/18/2021 3:14:37 PM	R79216

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Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:10:00 AM
Lab ID: 2106976-002F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	1.1	0.037	0.10	*	mg/L	5	6/22/2021 2:09:23 PM	60804
Barium	0.11	0.0016	0.0030		mg/L	1	6/22/2021 2:04:58 PM	60804
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 2:04:58 PM	60804
Boron	0.66	0.037	0.20		mg/L	5	6/22/2021 2:09:23 PM	60804
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 2:04:58 PM	60804
Calcium	96	0.57	5.0		mg/L	5	6/22/2021 2:09:23 PM	60804
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 2:04:58 PM	60804
Cobalt	0.0027	0.0024	0.0060	J	mg/L	1	6/22/2021 2:04:58 PM	60804
Copper	ND	0.0047	0.0060		mg/L	1	6/22/2021 2:04:58 PM	60804
Iron	0.43	0.064	0.25	*	mg/L	5	6/22/2021 2:09:23 PM	60804
Magnesium	19	0.067	1.0		mg/L	1	6/22/2021 2:04:58 PM	60804
Manganese	0.037	0.00081	0.0020		mg/L	1	6/22/2021 2:04:58 PM	60804
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/22/2021 2:04:58 PM	60804
Nickel	ND	0.0033	0.010		mg/L	1	6/22/2021 2:04:58 PM	60804
Potassium	1.4	0.16	1.0		mg/L	1	6/22/2021 2:04:58 PM	60804
Silver	ND	0.0013	0.0050		mg/L	1	6/22/2021 2:04:58 PM	60804
Sodium	490	1.9	10		mg/L	10	6/22/2021 2:15:51 PM	60804
Zinc	ND	0.0064	0.010		mg/L	1	6/22/2021 2:04:58 PM	60804
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/22/2021 3:46:44 PM	60804
Arsenic	0.00074	0.00013	0.0010	J	mg/L	1	6/22/2021 3:46:44 PM	60804
Lead	0.00031	0.000061	0.00050	J	mg/L	1	6/22/2021 3:46:44 PM	60804
Selenium	0.00047	0.00037	0.0010	J	mg/L	1	6/22/2021 3:46:44 PM	60804
Thallium	ND	0.00025	0.00025		mg/L	1	6/22/2021 3:46:44 PM	60804
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 2:11:25 PM	60773

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Analytical Report
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-31
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:10:00 AM
Lab ID: 2106976-002G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/18/2021 12:19:46 PM	B79194
Barium	0.11	0.0011	0.0020		mg/L	1	6/18/2021 12:19:46 PM	B79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 12:19:46 PM	B79194
Boron	0.61	0.0067	0.040		mg/L	1	6/18/2021 12:19:46 PM	B79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 12:19:46 PM	B79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 12:19:46 PM	B79194
Cobalt	ND	0.0024	0.0060		mg/L	1	6/18/2021 12:19:46 PM	B79194
Copper	ND	0.0035	0.0060		mg/L	1	6/18/2021 12:19:46 PM	B79194
Iron	ND	0.010	0.020		mg/L	1	6/18/2021 12:19:46 PM	B79194
Manganese	0.031	0.00058	0.0020		mg/L	1	6/18/2021 12:19:46 PM	B79194
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/18/2021 12:19:46 PM	B79194
Nickel	0.0034	0.0033	0.010	J	mg/L	1	6/18/2021 12:19:46 PM	B79194
Silver	ND	0.0013	0.0050		mg/L	1	6/18/2021 12:19:46 PM	B79194
Zinc	0.0087	0.0060	0.010	J	mg/L	1	6/18/2021 12:19:46 PM	B79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/23/2021 5:23:29 PM	C79314
Arsenic	0.00058	0.00012	0.0010	J	mg/L	1	6/21/2021 9:30:07 PM	C79234
Lead	ND	0.00028	0.0025		mg/L	5	6/23/2021 5:23:29 PM	C79314
Selenium	0.00044	0.00034	0.0010	J	mg/L	1	6/21/2021 9:30:07 PM	C79234
Thallium	ND	0.0012	0.0012		mg/L	5	6/23/2021 5:23:29 PM	C79314
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 11:11:23 AM	61092

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:25:00 AM
Lab ID: 2106976-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	890	2.3	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
Toluene	3.3	2.0	10	J	µg/L	10	6/24/2021 5:25:53 PM	R79410
Ethylbenzene	8.3	2.1	10	J	µg/L	10	6/24/2021 5:25:53 PM	R79410
Methyl tert-butyl ether (MTBE)	640	3.9	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,2,4-Trimethylbenzene	2.5	1.2	10	J	µg/L	10	6/24/2021 5:25:53 PM	R79410
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,2-Dichloroethane (EDC)	12	2.2	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
Naphthalene	ND	2.8	20		µg/L	10	6/24/2021 5:25:53 PM	R79410
1-Methylnaphthalene	ND	8.4	40		µg/L	10	6/24/2021 5:25:53 PM	R79410
2-Methylnaphthalene	ND	6.9	40		µg/L	10	6/24/2021 5:25:53 PM	R79410
Acetone	ND	23	100		µg/L	10	6/24/2021 5:25:53 PM	R79410
Bromobenzene	ND	2.8	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
Bromodichloromethane	ND	2.0	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
Bromoform	ND	3.1	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
Bromomethane	ND	16	30		µg/L	10	6/24/2021 5:25:53 PM	R79410
2-Butanone	ND	11	100		µg/L	10	6/24/2021 5:25:53 PM	R79410
Carbon disulfide	ND	4.4	100		µg/L	10	6/24/2021 5:25:53 PM	R79410
Carbon Tetrachloride	ND	1.8	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
Chlorobenzene	ND	1.4	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
Chloroethane	ND	3.8	20		µg/L	10	6/24/2021 5:25:53 PM	R79410
Chloroform	ND	1.3	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
Chloromethane	29	4.0	30	J	µg/L	10	6/24/2021 5:25:53 PM	R79410
2-Chlorotoluene	ND	1.3	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
4-Chlorotoluene	ND	5.1	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
cis-1,2-DCE	16	3.9	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	6/24/2021 5:25:53 PM	R79410
Dibromochloromethane	ND	2.8	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
Dibromomethane	ND	3.1	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
Dichlorodifluoromethane	ND	4.4	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,1-Dichloroethane	90	2.7	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,1-Dichloroethene	68	1.3	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,2-Dichloropropane	ND	1.3	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,3-Dichloropropane	ND	1.8	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
2,2-Dichloropropane	ND	2.6	20		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,1-Dichloropropene	ND	1.8	10		µg/L	10	6/24/2021 5:25:53 PM	R79410

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:25:00 AM
Lab ID: 2106976-003A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	3.3	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
2-Hexanone	ND	18	100		µg/L	10	6/24/2021 5:25:53 PM	R79410
Isopropylbenzene	22	1.8	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
4-Isopropyltoluene	ND	2.0	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
4-Methyl-2-pentanone	ND	11	100		µg/L	10	6/24/2021 5:25:53 PM	R79410
Methylene Chloride	5.0	4.0	30	J	µg/L	10	6/24/2021 5:25:53 PM	R79410
n-Butylbenzene	4.2	2.5	30	J	µg/L	10	6/24/2021 5:25:53 PM	R79410
n-Propylbenzene	10	1.8	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
sec-Butylbenzene	ND	6.1	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
Styrene	ND	1.3	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
tert-Butylbenzene	ND	2.4	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	6/24/2021 5:25:53 PM	R79410
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
trans-1,2-DCE	ND	4.9	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,2,3-Trichlorobenzene	ND	1.3	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,1,2-Trichloroethane	3.0	1.9	10	J	µg/L	10	6/24/2021 5:25:53 PM	R79410
Trichloroethene (TCE)	10	2.0	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
Trichlorofluoromethane	ND	0.92	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	6/24/2021 5:25:53 PM	R79410
Vinyl chloride	11	2.0	10		µg/L	10	6/24/2021 5:25:53 PM	R79410
Xylenes, Total	ND	5.5	15		µg/L	10	6/24/2021 5:25:53 PM	R79410
Surr: 1,2-Dichloroethane-d4	93.2	0	70-130		%Rec	10	6/24/2021 5:25:53 PM	R79410
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	10	6/24/2021 5:25:53 PM	R79410
Surr: Dibromofluoromethane	89.8	0	70-130		%Rec	10	6/24/2021 5:25:53 PM	R79410
Surr: Toluene-d8	101	0	70-130		%Rec	10	6/24/2021 5:25:53 PM	R79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	4.4	0.28	0.50		mg/L	10	6/24/2021 5:25:53 PM	G79410
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	10	6/24/2021 5:25:53 PM	G79410

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:25:00 AM
Lab ID: 2106976-003B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	6/23/2021 3:35:29 AM	60809

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:25:00 AM
Lab ID: 2106976-003C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.54	0.016	0.064		mg/L	1	6/24/2021 8:56:09 AM	60769
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/24/2021 8:56:09 AM	60769
Surr: DNOP	87.4	0	15-142		%Rec	1	6/24/2021 8:56:09 AM	60769

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:25:00 AM
Lab ID: 2106976-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Azobenzene	ND	0.55	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Benzoic acid	ND	1.1	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Benzyl alcohol	ND	0.68	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Bis(2-ethylhexyl)phthalate	5.2	4.5	10	J	µg/L	1	6/24/2021 1:41:47 PM	60820
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Carbazole	4.2	0.56	5.0	J	µg/L	1	6/24/2021 1:41:47 PM	60820
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
4-Chloroaniline	ND	0.53	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
2-Chlorophenol	ND	0.62	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	6/24/2021 1:41:47 PM	60820
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	6/24/2021 1:41:47 PM	60820
Dibenzofuran	ND	0.38	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Diethyl phthalate	ND	3.9	10		µg/L	1	6/24/2021 1:41:47 PM	60820
Dimethyl phthalate	ND	2.0	10		µg/L	1	6/24/2021 1:41:47 PM	60820
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Hexachloroethane	ND	0.45	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Isophorone	ND	0.40	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
2-Methylphenol	ND	0.51	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:25:00 AM
Lab ID: 2106976-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
2-Nitroaniline	ND	0.31	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
3-Nitroaniline	ND	1.6	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
4-Nitroaniline	ND	0.47	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Nitrobenzene	ND	0.51	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
2-Nitrophenol	ND	0.47	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
4-Nitrophenol	ND	0.28	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Pentachlorophenol	ND	0.59	20		µg/L	1	6/24/2021 1:41:47 PM	60820
Phenol	16	0.33	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Pyridine	ND	0.93	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	6/24/2021 1:41:47 PM	60820
Surr: 2-Fluorophenol	46.0	0	15-88.8		%Rec	1	6/24/2021 1:41:47 PM	60820
Surr: Phenol-d5	37.0	0	15-71.9		%Rec	1	6/24/2021 1:41:47 PM	60820
Surr: 2,4,6-Tribromophenol	75.6	0	15-97.4		%Rec	1	6/24/2021 1:41:47 PM	60820
Surr: Nitrobenzene-d5	56.3	0	15-117		%Rec	1	6/24/2021 1:41:47 PM	60820
Surr: 2-Fluorobiphenyl	56.8	0	15-100		%Rec	1	6/24/2021 1:41:47 PM	60820
Surr: 4-Terphenyl-d14	83.3	0	15-120		%Rec	1	6/24/2021 1:41:47 PM	60820
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	0.36	0.034	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
1-Methylnaphthalene	0.32	0.024	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
Acenaphthylene	ND	0.043	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
Acenaphthene	0.24	0.031	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
Fluorene	ND	0.031	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
Phenanthrene	0.14	0.057	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
Anthracene	ND	0.034	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
Fluoranthene	ND	0.10	0.20		µg/L	1	6/24/2021 8:39:00 AM	60807
Pyrene	ND	0.16	0.20		µg/L	1	6/24/2021 8:39:00 AM	60807
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
Chrysene	ND	0.024	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	6/24/2021 8:39:00 AM	60807
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	6/24/2021 8:39:00 AM	60807
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	6/24/2021 8:39:00 AM	60807
Surr: Nitrobenzene-d5	14.0	0	26.3-112	S	%Rec	1	6/24/2021 8:39:00 AM	60807
Surr: 2-Fluorobiphenyl	57.5	0	21.1-110		%Rec	1	6/24/2021 8:39:00 AM	60807

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:25:00 AM
Lab ID: 2106976-003D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	93.5	0	17.6-167		%Rec	1	6/24/2021 8:39:00 AM	60807

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:25:00 AM
Lab ID: 2106976-003E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.28	0.50		mg/L	5	6/18/2021 3:39:19 PM	R79216
Chloride	760	12	25	*	mg/L	50	6/30/2021 5:00:03 PM	R79498
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/18/2021 3:39:19 PM	R79216
Bromide	1.4	0.25	0.50		mg/L	5	6/18/2021 3:39:19 PM	R79216
Nitrogen, Nitrate (As N)	0.25	0.10	0.50	J	mg/L	5	6/18/2021 3:39:19 PM	R79216
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/18/2021 3:39:19 PM	R79216
Sulfate	64	1.2	2.5		mg/L	5	6/18/2021 3:39:19 PM	R79216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:25:00 AM
Lab ID: 2106976-003F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.30	0.0074	0.020	*	mg/L	1	6/22/2021 2:17:25 PM	60804
Barium	0.29	0.0016	0.0030		mg/L	1	6/22/2021 2:17:25 PM	60804
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 2:17:25 PM	60804
Boron	0.69	0.0074	0.040		mg/L	1	6/22/2021 2:17:25 PM	60804
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 2:17:25 PM	60804
Calcium	140	1.1	10		mg/L	10	6/22/2021 2:18:46 PM	60804
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 2:17:25 PM	60804
Cobalt	0.0033	0.0024	0.0060	J	mg/L	1	6/22/2021 2:17:25 PM	60804
Copper	ND	0.0047	0.0060		mg/L	1	6/22/2021 2:17:25 PM	60804
Iron	1.8	0.13	0.50	*	mg/L	10	6/22/2021 2:18:46 PM	60804
Magnesium	28	0.067	1.0		mg/L	1	6/22/2021 2:17:25 PM	60804
Manganese	2.7	0.0081	0.020	*	mg/L	10	6/22/2021 2:18:46 PM	60804
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/22/2021 2:17:25 PM	60804
Nickel	0.022	0.0033	0.010		mg/L	1	6/22/2021 2:17:25 PM	60804
Potassium	1.7	0.16	1.0		mg/L	1	6/22/2021 2:17:25 PM	60804
Silver	ND	0.0013	0.0050		mg/L	1	6/22/2021 2:17:25 PM	60804
Sodium	590	1.9	10		mg/L	10	6/22/2021 2:18:46 PM	60804
Zinc	ND	0.0064	0.010		mg/L	1	6/22/2021 2:17:25 PM	60804
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/22/2021 4:03:10 PM	60804
Arsenic	0.0036	0.00013	0.0010		mg/L	1	6/22/2021 4:03:10 PM	60804
Lead	ND	0.00031	0.0025		mg/L	5	6/22/2021 5:17:16 PM	60804
Selenium	ND	0.00037	0.0010		mg/L	1	6/22/2021 4:03:10 PM	60804
Thallium	ND	0.0012	0.0012		mg/L	5	6/22/2021 5:17:16 PM	60804
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 2:13:51 PM	60773

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-25
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 9:25:00 AM
Lab ID: 2106976-003G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/18/2021 12:22:57 PM	B79194
Barium	0.28	0.0011	0.0020		mg/L	1	6/18/2021 12:22:57 PM	B79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 12:22:57 PM	B79194
Boron	0.68	0.0067	0.040		mg/L	1	6/18/2021 12:22:57 PM	B79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 12:22:57 PM	B79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 12:22:57 PM	B79194
Cobalt	0.0046	0.0024	0.0060	J	mg/L	1	6/18/2021 12:22:57 PM	B79194
Copper	ND	0.0035	0.0060		mg/L	1	6/18/2021 12:22:57 PM	B79194
Iron	0.095	0.010	0.020		mg/L	1	6/18/2021 12:22:57 PM	B79194
Manganese	2.8	0.0058	0.020	*	mg/L	10	6/18/2021 12:24:30 PM	B79194
Molybdenum	0.0068	0.0056	0.0080	J	mg/L	1	6/18/2021 12:22:57 PM	B79194
Nickel	0.022	0.0033	0.010		mg/L	1	6/18/2021 12:22:57 PM	B79194
Silver	ND	0.0013	0.0050		mg/L	1	6/18/2021 12:22:57 PM	B79194
Zinc	0.0084	0.0060	0.010	J	mg/L	1	6/18/2021 12:22:57 PM	B79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/23/2021 5:28:13 PM	C79314
Arsenic	0.0018	0.00012	0.0010		mg/L	1	6/21/2021 9:34:51 PM	C79234
Lead	ND	0.00028	0.0025		mg/L	5	6/23/2021 5:28:13 PM	C79314
Selenium	0.00045	0.00034	0.0010	J	mg/L	1	6/21/2021 9:34:51 PM	C79234
Thallium	ND	0.0012	0.0012		mg/L	5	6/23/2021 5:28:13 PM	C79314
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 11:13:47 AM	61092

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:10:00 AM
Lab ID: 2106976-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.37	0.23	1.0	J	µg/L	1	6/24/2021 5:53:17 PM	R79410
Toluene	ND	0.20	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Methyl tert-butyl ether (MTBE)	1.3	0.39	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,2-Dichloroethane (EDC)	0.49	0.22	1.0	J	µg/L	1	6/24/2021 5:53:17 PM	R79410
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Naphthalene	ND	0.28	2.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Acetone	3.9	2.3	10	J	µg/L	1	6/24/2021 5:53:17 PM	R79410
Bromobenzene	ND	0.28	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Bromoform	ND	0.31	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Bromomethane	ND	1.6	3.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
2-Butanone	1.2	1.1	10	J	µg/L	1	6/24/2021 5:53:17 PM	R79410
Carbon disulfide	ND	0.44	10		µg/L	1	6/24/2021 5:53:17 PM	R79410
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Chloroethane	ND	0.38	2.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Chloroform	ND	0.13	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Chloromethane	ND	0.40	3.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Dibromomethane	ND	0.31	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,1-Dichloroethane	0.92	0.27	1.0	J	µg/L	1	6/24/2021 5:53:17 PM	R79410
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:10:00 AM
Lab ID: 2106976-004A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
2-Hexanone	ND	1.8	10		µg/L	1	6/24/2021 5:53:17 PM	R79410
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/24/2021 5:53:17 PM	R79410
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Styrene	ND	0.13	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/24/2021 5:53:17 PM	R79410
Xylenes, Total	ND	0.55	1.5		µg/L	1	6/24/2021 5:53:17 PM	R79410
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%Rec	1	6/24/2021 5:53:17 PM	R79410
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	6/24/2021 5:53:17 PM	R79410
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	6/24/2021 5:53:17 PM	R79410
Surr: Toluene-d8	101	0	70-130		%Rec	1	6/24/2021 5:53:17 PM	R79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.029	0.028	0.050	J	mg/L	1	6/24/2021 5:53:17 PM	G79410
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	6/24/2021 5:53:17 PM	G79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:10:00 AM
Lab ID: 2106976-004B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	6/23/2021 3:50:37 AM	60809

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:10:00 AM
Lab ID: 2106976-004C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.063	0.016	0.064	J	mg/L	1	6/24/2021 9:19:56 AM	60769
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/24/2021 9:19:56 AM	60769
Surr: DNOP	99.3	0	15-142		%Rec	1	6/24/2021 9:19:56 AM	60769

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:10:00 AM
Lab ID: 2106976-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Azobenzene	ND	0.55	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Benzoic acid	ND	1.1	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Benzyl alcohol	ND	0.68	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Bis(2-ethylhexyl)phthalate	4.9	4.5	10	J	µg/L	1	6/24/2021 2:24:05 PM	60820
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Carbazole	ND	0.56	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
4-Chloroaniline	ND	0.53	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
2-Chlorophenol	ND	0.62	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	6/24/2021 2:24:05 PM	60820
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	6/24/2021 2:24:05 PM	60820
Dibenzofuran	ND	0.38	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Diethyl phthalate	ND	3.9	10		µg/L	1	6/24/2021 2:24:05 PM	60820
Dimethyl phthalate	ND	2.0	10		µg/L	1	6/24/2021 2:24:05 PM	60820
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Hexachloroethane	ND	0.45	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Isophorone	ND	0.40	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
2-Methylphenol	ND	0.51	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:10:00 AM
Lab ID: 2106976-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
2-Nitroaniline	ND	0.31	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
3-Nitroaniline	ND	1.6	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
4-Nitroaniline	ND	0.47	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Nitrobenzene	ND	0.51	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
2-Nitrophenol	ND	0.47	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
4-Nitrophenol	ND	0.28	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Pentachlorophenol	ND	0.59	20		µg/L	1	6/24/2021 2:24:05 PM	60820
Phenol	ND	0.33	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Pyridine	ND	0.93	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	6/24/2021 2:24:05 PM	60820
Surr: 2-Fluorophenol	52.5	0	15-88.8		%Rec	1	6/24/2021 2:24:05 PM	60820
Surr: Phenol-d5	40.3	0	15-71.9		%Rec	1	6/24/2021 2:24:05 PM	60820
Surr: 2,4,6-Tribromophenol	64.2	0	15-97.4		%Rec	1	6/24/2021 2:24:05 PM	60820
Surr: Nitrobenzene-d5	61.0	0	15-117		%Rec	1	6/24/2021 2:24:05 PM	60820
Surr: 2-Fluorobiphenyl	58.1	0	15-100		%Rec	1	6/24/2021 2:24:05 PM	60820
Surr: 4-Terphenyl-d14	91.8	0	15-120		%Rec	1	6/24/2021 2:24:05 PM	60820
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
Acenaphthylene	ND	0.043	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
Acenaphthene	ND	0.031	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
Fluorene	ND	0.031	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
Phenanthrene	ND	0.057	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
Anthracene	ND	0.034	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
Fluoranthene	ND	0.10	0.20		µg/L	1	6/24/2021 9:22:00 AM	60807
Pyrene	ND	0.16	0.20		µg/L	1	6/24/2021 9:22:00 AM	60807
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
Chrysene	ND	0.024	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	6/24/2021 9:22:00 AM	60807
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	6/24/2021 9:22:00 AM	60807
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	6/24/2021 9:22:00 AM	60807
Surr: Nitrobenzene-d5	68.5	0	26.3-112		%Rec	1	6/24/2021 9:22:00 AM	60807
Surr: 2-Fluorobiphenyl	56.0	0	21.1-110		%Rec	1	6/24/2021 9:22:00 AM	60807

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:10:00 AM
Lab ID: 2106976-004D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	95.5	0	17.6-167		%Rec	1	6/24/2021 9:22:00 AM	60807

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:10:00 AM
Lab ID: 2106976-004E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.28	0.50		mg/L	5	6/18/2021 4:04:02 PM	R79216
Chloride	3400	120	250	*	mg/L	500	6/30/2021 5:12:55 PM	R79498
Nitrogen, Nitrite (As N)	ND	0.29	2.0		mg/L	20	6/18/2021 4:16:23 PM	R79216
Bromide	1.4	0.25	0.50		mg/L	5	6/18/2021 4:04:02 PM	R79216
Nitrogen, Nitrate (As N)	0.20	0.10	0.50	J	mg/L	5	6/18/2021 4:04:02 PM	R79216
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/18/2021 4:04:02 PM	R79216
Sulfate	530	5.0	10	*	mg/L	20	6/18/2021 4:16:23 PM	R79216

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Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:10:00 AM
Lab ID: 2106976-004F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	1.9	0.037	0.10	*	mg/L	5	6/22/2021 2:26:19 PM	60804
Barium	0.068	0.0016	0.0030		mg/L	1	6/22/2021 2:24:57 PM	60804
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 2:24:57 PM	60804
Boron	2.0	0.037	0.20		mg/L	5	6/22/2021 2:26:19 PM	60804
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 2:24:57 PM	60804
Calcium	250	0.57	5.0		mg/L	5	6/22/2021 2:26:19 PM	60804
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 2:24:57 PM	60804
Cobalt	0.0024	0.0024	0.0060	J	mg/L	1	6/22/2021 2:24:57 PM	60804
Copper	ND	0.0047	0.0060		mg/L	1	6/22/2021 2:24:57 PM	60804
Iron	0.79	0.013	0.050	*	mg/L	1	6/22/2021 2:24:57 PM	60804
Magnesium	51	0.067	1.0		mg/L	1	6/22/2021 2:24:57 PM	60804
Manganese	0.022	0.00081	0.0020		mg/L	1	6/22/2021 2:24:57 PM	60804
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/22/2021 2:24:57 PM	60804
Nickel	0.0066	0.0033	0.010	J	mg/L	1	6/22/2021 2:24:57 PM	60804
Potassium	6.3	0.16	1.0		mg/L	1	6/22/2021 2:24:57 PM	60804
Silver	0.0013	0.0013	0.0050	J	mg/L	1	6/22/2021 2:24:57 PM	60804
Sodium	2200	9.3	50		mg/L	50	6/22/2021 2:27:52 PM	60804
Zinc	ND	0.0064	0.010		mg/L	1	6/22/2021 2:24:57 PM	60804
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/22/2021 4:05:34 PM	60804
Arsenic	0.00095	0.00063	0.0050	J	mg/L	5	6/24/2021 12:29:42 PM	60804
Lead	0.00096	0.00031	0.0025	J	mg/L	5	6/22/2021 5:19:41 PM	60804
Selenium	0.0019	0.0019	0.0050	J	mg/L	5	6/24/2021 12:29:42 PM	60804
Thallium	ND	0.0012	0.0012		mg/L	5	6/22/2021 5:19:41 PM	60804
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 2:16:15 PM	60773

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-40
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:10:00 AM
Lab ID: 2106976-004G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/18/2021 12:34:25 PM	B79194
Barium	0.055	0.0011	0.0020		mg/L	1	6/18/2021 12:34:25 PM	B79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 12:34:25 PM	B79194
Boron	2.1	0.033	0.20		mg/L	5	6/18/2021 12:35:59 PM	B79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 12:34:25 PM	B79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 12:34:25 PM	B79194
Cobalt	0.0052	0.0024	0.0060	J	mg/L	1	6/18/2021 12:34:25 PM	B79194
Copper	ND	0.0035	0.0060		mg/L	1	6/18/2021 12:34:25 PM	B79194
Iron	ND	0.010	0.020		mg/L	1	6/18/2021 12:34:25 PM	B79194
Manganese	0.0023	0.00058	0.0020		mg/L	1	6/18/2021 12:34:25 PM	B79194
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/18/2021 12:34:25 PM	B79194
Nickel	0.0070	0.0033	0.010	J	mg/L	1	6/18/2021 12:34:25 PM	B79194
Silver	0.0014	0.0013	0.0050	J	mg/L	1	6/18/2021 12:34:25 PM	B79194
Zinc	0.0080	0.0060	0.010	J	mg/L	1	6/18/2021 12:34:25 PM	B79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/23/2021 5:32:57 PM	C79314
Arsenic	ND	0.0012	0.010		mg/L	10	6/29/2021 7:41:43 PM	C79446
Lead	ND	0.00028	0.0025		mg/L	5	6/23/2021 5:32:57 PM	C79314
Selenium	ND	0.0034	0.010		mg/L	10	6/25/2021 7:09:39 PM	B79406
Thallium	ND	0.0012	0.0012		mg/L	5	6/23/2021 5:32:57 PM	C79314
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 11:16:12 AM	61092

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	6200	23	100		µg/L	100	6/24/2021 6:20:37 PM	R79410
Toluene	360	2.0	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Ethylbenzene	450	2.1	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Methyl tert-butyl ether (MTBE)	49	3.9	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,2,4-Trimethylbenzene	250	1.2	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,3,5-Trimethylbenzene	58	1.8	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,2-Dichloroethane (EDC)	ND	2.2	5.0		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Naphthalene	52	2.8	20		µg/L	10	6/24/2021 6:48:00 PM	R79410
1-Methylnaphthalene	10	8.4	40	J	µg/L	10	6/24/2021 6:48:00 PM	R79410
2-Methylnaphthalene	13	6.9	40	J	µg/L	10	6/24/2021 6:48:00 PM	R79410
Acetone	ND	23	100		µg/L	10	6/24/2021 6:48:00 PM	R79410
Bromobenzene	ND	2.8	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Bromodichloromethane	ND	2.0	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Bromoform	ND	3.1	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Bromomethane	ND	16	30		µg/L	10	6/24/2021 6:48:00 PM	R79410
2-Butanone	71	11	100	J	µg/L	10	6/24/2021 6:48:00 PM	R79410
Carbon disulfide	ND	4.4	100		µg/L	10	6/24/2021 6:48:00 PM	R79410
Carbon Tetrachloride	ND	1.8	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Chlorobenzene	ND	1.4	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Chloroethane	ND	3.8	20		µg/L	10	6/24/2021 6:48:00 PM	R79410
Chloroform	ND	1.3	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Chloromethane	19	4.0	30	J	µg/L	10	6/24/2021 6:48:00 PM	R79410
2-Chlorotoluene	ND	1.3	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
4-Chlorotoluene	ND	5.1	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
cis-1,2-DCE	ND	3.9	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	6/24/2021 6:48:00 PM	R79410
Dibromochloromethane	ND	2.8	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Dibromomethane	ND	3.1	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Dichlorodifluoromethane	ND	4.4	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,1-Dichloroethane	14	2.7	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,1-Dichloroethene	ND	1.3	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,2-Dichloropropane	ND	1.3	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,3-Dichloropropane	ND	1.8	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
2,2-Dichloropropane	ND	2.6	20		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,1-Dichloropropene	ND	1.8	10		µg/L	10	6/24/2021 6:48:00 PM	R79410

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Qualifiers:

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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-005A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	3.3	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
2-Hexanone	ND	18	100		µg/L	10	6/24/2021 6:48:00 PM	R79410
Isopropylbenzene	17	1.8	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
4-Isopropyltoluene	ND	2.0	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
4-Methyl-2-pentanone	11	11	100	J	µg/L	10	6/24/2021 6:48:00 PM	R79410
Methylene Chloride	5.1	4.0	30	J	µg/L	10	6/24/2021 6:48:00 PM	R79410
n-Butylbenzene	6.4	2.5	30	J	µg/L	10	6/24/2021 6:48:00 PM	R79410
n-Propylbenzene	31	1.8	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
sec-Butylbenzene	6.7	6.1	10	J	µg/L	10	6/24/2021 6:48:00 PM	R79410
Styrene	ND	1.3	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
tert-Butylbenzene	ND	2.4	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	6/24/2021 6:48:00 PM	R79410
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
trans-1,2-DCE	ND	4.9	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,2,3-Trichlorobenzene	ND	1.3	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,1,2-Trichloroethane	ND	1.9	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Trichlorofluoromethane	ND	0.92	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	6/24/2021 6:48:00 PM	R79410
Vinyl chloride	18	2.0	10		µg/L	10	6/24/2021 6:48:00 PM	R79410
Xylenes, Total	1600	5.5	15		µg/L	10	6/24/2021 6:48:00 PM	R79410
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	10	6/24/2021 6:48:00 PM	R79410
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	10	6/24/2021 6:48:00 PM	R79410
Surr: Dibromofluoromethane	99.1	0	70-130		%Rec	10	6/24/2021 6:48:00 PM	R79410
Surr: Toluene-d8	99.6	0	70-130		%Rec	10	6/24/2021 6:48:00 PM	R79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	19	0.28	0.50		mg/L	10	6/24/2021 6:48:00 PM	G79410
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	10	6/24/2021 6:48:00 PM	G79410

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PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-005B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	1.0	0.016	0.064		mg/L	1	6/24/2021 9:43:40 AM	60769
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/24/2021 9:43:40 AM	60769
Surr: DNOP	97.1	0	15-142		%Rec	1	6/24/2021 9:43:40 AM	60769

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Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	10	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Azobenzene	ND	11	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Benzoic acid	ND	21	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Benzyl alcohol	ND	14	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Bis(2-chloroethoxy)methane	ND	8.2	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Bis(2-chloroethyl)ether	ND	13	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Bis(2-chloroisopropyl)ether	ND	11	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Bis(2-ethylhexyl)phthalate	ND	89	200	D	µg/L	20	6/24/2021 3:05:57 PM	60820
4-Bromophenyl phenyl ether	ND	15	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Butyl benzyl phthalate	ND	15	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Carbazole	ND	11	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
4-Chloro-3-methylphenol	ND	8.1	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
4-Chloroaniline	ND	11	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
2-Chloronaphthalene	ND	12	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
2-Chlorophenol	ND	12	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
4-Chlorophenyl phenyl ether	ND	11	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Di-n-butyl phthalate	ND	130	200	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Di-n-octyl phthalate	ND	62	400	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Dibenzofuran	ND	7.5	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
1,2-Dichlorobenzene	ND	15	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
1,3-Dichlorobenzene	ND	13	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
1,4-Dichlorobenzene	ND	14	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
3,3´-Dichlorobenzidine	ND	10	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Diethyl phthalate	ND	78	200	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Dimethyl phthalate	ND	40	200	D	µg/L	20	6/24/2021 3:05:57 PM	60820
2,4-Dichlorophenol	ND	12	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
2,4-Dimethylphenol	48	19	100	JD	µg/L	20	6/24/2021 3:05:57 PM	60820
4,6-Dinitro-2-methylphenol	ND	11	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
2,4-Dinitrophenol	ND	10	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
2,4-Dinitrotoluene	ND	12	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
2,6-Dinitrotoluene	ND	12	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Hexachlorobenzene	ND	13	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Hexachlorobutadiene	ND	16	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Hexachlorocyclopentadiene	ND	13	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Hexachloroethane	ND	9.0	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Isophorone	ND	8.1	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
2-Methylphenol	36	10	100	JD	µg/L	20	6/24/2021 3:05:57 PM	60820
3+4-Methylphenol	ND	9.0	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
N-Nitrosodi-n-propylamine	ND	9.6	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
N-Nitrosodimethylamine	ND	7.2	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820

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Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	20	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
2-Nitroaniline	ND	6.2	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
3-Nitroaniline	ND	31	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
4-Nitroaniline	ND	9.3	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Nitrobenzene	ND	10	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
2-Nitrophenol	ND	9.5	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
4-Nitrophenol	ND	5.5	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Pentachlorophenol	ND	12	400	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Phenol	96	6.5	100	JD	µg/L	20	6/24/2021 3:05:57 PM	60820
Pyridine	ND	19	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
1,2,4-Trichlorobenzene	ND	12	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
2,4,5-Trichlorophenol	ND	12	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
2,4,6-Trichlorophenol	ND	8.7	100	D	µg/L	20	6/24/2021 3:05:57 PM	60820
Surr: 2-Fluorophenol	0	0	15-88.8	SD	%Rec	20	6/24/2021 3:05:57 PM	60820
Surr: Phenol-d5	0	0	15-71.9	SD	%Rec	20	6/24/2021 3:05:57 PM	60820
Surr: 2,4,6-Tribromophenol	0	0	15-97.4	SD	%Rec	20	6/24/2021 3:05:57 PM	60820
Surr: Nitrobenzene-d5	0	0	15-117	SD	%Rec	20	6/24/2021 3:05:57 PM	60820
Surr: 2-Fluorobiphenyl	0	0	15-100	SD	%Rec	20	6/24/2021 3:05:57 PM	60820
Surr: 4-Terphenyl-d14	0	0	15-120	SD	%Rec	20	6/24/2021 3:05:57 PM	60820
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	42	0.34	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
1-Methylnaphthalene	11	0.24	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
2-Methylnaphthalene	15	0.34	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Acenaphthylene	ND	0.43	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Acenaphthene	ND	0.31	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Fluorene	ND	0.31	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Phenanthrene	ND	0.57	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Anthracene	ND	0.34	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Fluoranthene	ND	1.0	2.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Pyrene	ND	1.6	2.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Chrysene	ND	0.24	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Benzo(b)fluoranthene	ND	0.57	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Benzo(k)fluoranthene	ND	0.36	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Benzo(a)pyrene	ND	0.34	0.70	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Dibenz(a,h)anthracene	ND	0.34	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Benzo(g,h,i)perylene	ND	0.34	1.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Indeno(1,2,3-cd)pyrene	ND	0.43	3.0	D	µg/L	10	6/24/2021 10:06:00 AM	60807
Surr: Nitrobenzene-d5	120	0	26.3-112	SD	%Rec	10	6/24/2021 10:06:00 AM	60807
Surr: 2-Fluorobiphenyl	60.0	0	21.1-110	D	%Rec	10	6/24/2021 10:06:00 AM	60807

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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-005C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	140	0	17.6-167	D	%Rec	10	6/24/2021 10:06:00 AM	60807

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Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-005D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.28	0.50		mg/L	5	6/18/2021 4:53:26 PM	R79216
Chloride	1700	50	100	*	mg/L	200	6/30/2021 5:25:48 PM	R79498
Nitrogen, Nitrite (As N)	ND	0.073	0.50		mg/L	5	6/18/2021 4:53:26 PM	R79216
Bromide	0.95	0.25	0.50		mg/L	5	6/18/2021 4:53:26 PM	R79216
Nitrogen, Nitrate (As N)	0.14	0.10	0.50	J	mg/L	5	6/18/2021 4:53:26 PM	R79216
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/18/2021 4:53:26 PM	R79216
Sulfate	8.5	1.2	2.5		mg/L	5	6/18/2021 4:53:26 PM	R79216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-005E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.23	0.0074	0.020	*	mg/L	1	6/22/2021 2:29:24 PM	60804
Barium	4.8	0.0082	0.015	*	mg/L	5	6/22/2021 2:30:43 PM	60804
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 2:29:24 PM	60804
Boron	0.58	0.0074	0.040		mg/L	1	6/22/2021 2:29:24 PM	60804
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 2:29:24 PM	60804
Calcium	260	0.57	5.0		mg/L	5	6/22/2021 2:30:43 PM	60804
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 2:29:24 PM	60804
Cobalt	0.0072	0.0024	0.0060		mg/L	1	6/22/2021 2:29:24 PM	60804
Copper	ND	0.0047	0.0060		mg/L	1	6/22/2021 2:29:24 PM	60804
Iron	7.1	0.26	1.0	*	mg/L	20	6/22/2021 2:32:03 PM	60804
Magnesium	74	0.067	1.0		mg/L	1	6/22/2021 2:29:24 PM	60804
Manganese	4.8	0.0041	0.010	*	mg/L	5	6/22/2021 2:30:43 PM	60804
Molybdenum	0.017	0.0065	0.0080		mg/L	1	6/22/2021 2:29:24 PM	60804
Nickel	0.029	0.0033	0.010		mg/L	1	6/22/2021 2:29:24 PM	60804
Potassium	1.5	0.16	1.0		mg/L	1	6/22/2021 2:29:24 PM	60804
Silver	ND	0.0013	0.0050		mg/L	1	6/22/2021 2:29:24 PM	60804
Sodium	940	3.7	20		mg/L	20	6/22/2021 2:32:03 PM	60804
Zinc	ND	0.0064	0.010		mg/L	1	6/22/2021 2:29:24 PM	60804
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/22/2021 4:08:00 PM	60804
Arsenic	0.012	0.00013	0.0010	*	mg/L	1	6/22/2021 4:08:00 PM	60804
Lead	0.00043	0.00031	0.0025	J	mg/L	5	6/22/2021 5:22:06 PM	60804
Selenium	ND	0.00037	0.0010		mg/L	1	6/22/2021 4:08:00 PM	60804
Thallium	ND	0.0012	0.0012		mg/L	5	6/22/2021 5:22:06 PM	60804
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 2:23:26 PM	60773

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-005F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/18/2021 12:39:08 PM	B79194
Barium	4.8	0.0056	0.010	*	mg/L	5	6/18/2021 12:40:31 PM	B79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 12:39:08 PM	B79194
Boron	0.58	0.0067	0.040		mg/L	1	6/18/2021 12:39:08 PM	B79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 12:39:08 PM	B79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 12:39:08 PM	B79194
Cobalt	0.0080	0.0024	0.0060		mg/L	1	6/18/2021 12:39:08 PM	B79194
Copper	ND	0.0035	0.0060		mg/L	1	6/18/2021 12:39:08 PM	B79194
Iron	4.8	0.052	0.10	*	mg/L	5	6/18/2021 12:40:31 PM	B79194
Manganese	4.9	0.0029	0.010	*	mg/L	5	6/18/2021 12:40:31 PM	B79194
Molybdenum	0.016	0.0056	0.0080		mg/L	1	6/18/2021 12:39:08 PM	B79194
Nickel	0.029	0.0033	0.010		mg/L	1	6/18/2021 12:39:08 PM	B79194
Silver	ND	0.0013	0.0050		mg/L	1	6/18/2021 12:39:08 PM	B79194
Zinc	0.0083	0.0060	0.010	J	mg/L	1	6/18/2021 12:39:08 PM	B79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/23/2021 5:37:42 PM	C79314
Arsenic	0.0075	0.00012	0.0010		mg/L	1	6/21/2021 9:53:52 PM	C79234
Lead	ND	0.00028	0.0025		mg/L	5	6/23/2021 5:37:42 PM	C79314
Selenium	ND	0.00034	0.0010		mg/L	1	6/21/2021 9:53:52 PM	C79234
Thallium	ND	0.0012	0.0012		mg/L	5	6/23/2021 5:37:42 PM	C79314
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 11:18:37 AM	61092

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.78	0.23	1.0	J	µg/L	1	6/24/2021 7:15:15 PM	R79410
Toluene	0.29	0.20	1.0	J	µg/L	1	6/24/2021 7:15:15 PM	R79410
Ethylbenzene	0.25	0.21	1.0	J	µg/L	1	6/24/2021 7:15:15 PM	R79410
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,2,4-Trimethylbenzene	0.16	0.12	1.0	J	µg/L	1	6/24/2021 7:15:15 PM	R79410
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Naphthalene	ND	0.28	2.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Acetone	6.4	2.3	10	J	µg/L	1	6/24/2021 7:15:15 PM	R79410
Bromobenzene	ND	0.28	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Bromoform	ND	0.31	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Bromomethane	ND	1.6	3.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
2-Butanone	8.3	1.1	10	J	µg/L	1	6/24/2021 7:15:15 PM	R79410
Carbon disulfide	ND	0.44	10		µg/L	1	6/24/2021 7:15:15 PM	R79410
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Chloroethane	ND	0.38	2.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Chloroform	ND	0.13	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Chloromethane	ND	0.40	3.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Dibromomethane	ND	0.31	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-006A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
2-Hexanone	ND	1.8	10		µg/L	1	6/24/2021 7:15:15 PM	R79410
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/24/2021 7:15:15 PM	R79410
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Styrene	ND	0.13	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/24/2021 7:15:15 PM	R79410
Xylenes, Total	0.80	0.55	1.5	J	µg/L	1	6/24/2021 7:15:15 PM	R79410
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	6/24/2021 7:15:15 PM	R79410
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	6/24/2021 7:15:15 PM	R79410
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	6/24/2021 7:15:15 PM	R79410
Surr: Toluene-d8	97.6	0	70-130		%Rec	1	6/24/2021 7:15:15 PM	R79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	0.030	0.028	0.050	J	mg/L	1	6/24/2021 7:15:15 PM	G79410
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	6/24/2021 7:15:15 PM	G79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-006B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	0.026	0.016	0.064	J	mg/L	1	6/24/2021 10:54:54 AM	60769
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/24/2021 10:54:54 AM	60769
Surr: DNOP	89.5	0	15-142		%Rec	1	6/24/2021 10:54:54 AM	60769

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Azobenzene	ND	0.55	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Benzoic acid	ND	1.1	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Benzyl alcohol	ND	0.68	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Bis(2-ethylhexyl)phthalate	4.6	4.5	10	J	µg/L	1	6/24/2021 3:47:55 PM	60820
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Carbazole	ND	0.56	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
4-Chloroaniline	ND	0.53	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
2-Chlorophenol	ND	0.62	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	6/24/2021 3:47:55 PM	60820
Di-n-octyl phthalate	6.5	3.1	20	J	µg/L	1	6/24/2021 3:47:55 PM	60820
Dibenzofuran	ND	0.38	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Diethyl phthalate	ND	3.9	10		µg/L	1	6/24/2021 3:47:55 PM	60820
Dimethyl phthalate	ND	2.0	10		µg/L	1	6/24/2021 3:47:55 PM	60820
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Hexachloroethane	ND	0.45	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Isophorone	ND	0.40	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
2-Methylphenol	ND	0.51	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
2-Nitroaniline	ND	0.31	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
3-Nitroaniline	ND	1.6	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
4-Nitroaniline	ND	0.47	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Nitrobenzene	ND	0.51	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
2-Nitrophenol	ND	0.47	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
4-Nitrophenol	ND	0.28	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Pentachlorophenol	ND	0.59	20		µg/L	1	6/24/2021 3:47:55 PM	60820
Phenol	ND	0.33	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Pyridine	ND	0.93	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	6/24/2021 3:47:55 PM	60820
Surr: 2-Fluorophenol	42.8	0	15-88.8		%Rec	1	6/24/2021 3:47:55 PM	60820
Surr: Phenol-d5	32.8	0	15-71.9		%Rec	1	6/24/2021 3:47:55 PM	60820
Surr: 2,4,6-Tribromophenol	54.7	0	15-97.4		%Rec	1	6/24/2021 3:47:55 PM	60820
Surr: Nitrobenzene-d5	51.4	0	15-117		%Rec	1	6/24/2021 3:47:55 PM	60820
Surr: 2-Fluorobiphenyl	51.6	0	15-100		%Rec	1	6/24/2021 3:47:55 PM	60820
Surr: 4-Terphenyl-d14	90.7	0	15-120		%Rec	1	6/24/2021 3:47:55 PM	60820
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	ND	0.034	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
Acenaphthylene	ND	0.043	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
Acenaphthene	ND	0.031	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
Fluorene	ND	0.031	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
Phenanthrene	ND	0.057	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
Anthracene	ND	0.034	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
Fluoranthene	ND	0.10	0.20		µg/L	1	6/24/2021 10:50:00 AM	60807
Pyrene	ND	0.16	0.20		µg/L	1	6/24/2021 10:50:00 AM	60807
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
Chrysene	ND	0.024	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	6/24/2021 10:50:00 AM	60807
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	6/24/2021 10:50:00 AM	60807
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	6/24/2021 10:50:00 AM	60807
Surr: Nitrobenzene-d5	75.5	0	26.3-112		%Rec	1	6/24/2021 10:50:00 AM	60807
Surr: 2-Fluorobiphenyl	69.5	0	21.1-110		%Rec	1	6/24/2021 10:50:00 AM	60807

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-006C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	95.5	0	17.6-167		%Rec	1	6/24/2021 10:50:00 AM	60807

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-006D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.13	0.056	0.10		mg/L	1	6/18/2021 5:18:08 PM	R79216
Chloride	1.6	0.25	0.50		mg/L	1	6/18/2021 5:18:08 PM	R79216
Nitrogen, Nitrite (As N)	ND	0.015	0.10		mg/L	1	6/18/2021 5:18:08 PM	R79216
Bromide	ND	0.050	0.10		mg/L	1	6/18/2021 5:18:08 PM	R79216
Nitrogen, Nitrate (As N)	0.080	0.020	0.10	J	mg/L	1	6/18/2021 5:18:08 PM	R79216
Phosphorus, Orthophosphate (As P)	ND	0.25	0.50		mg/L	1	6/18/2021 5:18:08 PM	R79216
Sulfate	ND	0.25	0.50		mg/L	1	6/18/2021 5:18:08 PM	R79216

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-006E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	ND	0.0074	0.020		mg/L	1	6/22/2021 2:33:38 PM	60804
Barium	ND	0.0016	0.0030		mg/L	1	6/22/2021 2:33:38 PM	60804
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 2:33:38 PM	60804
Boron	ND	0.0074	0.040		mg/L	1	6/22/2021 2:33:38 PM	60804
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 2:33:38 PM	60804
Calcium	ND	0.11	1.0		mg/L	1	6/22/2021 2:33:38 PM	60804
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 2:33:38 PM	60804
Cobalt	ND	0.0024	0.0060		mg/L	1	6/22/2021 2:33:38 PM	60804
Copper	ND	0.0047	0.0060		mg/L	1	6/22/2021 2:33:38 PM	60804
Iron	ND	0.013	0.050		mg/L	1	6/22/2021 2:33:38 PM	60804
Magnesium	ND	0.067	1.0		mg/L	1	6/22/2021 2:33:38 PM	60804
Manganese	ND	0.00081	0.0020		mg/L	1	6/22/2021 2:33:38 PM	60804
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/22/2021 2:33:38 PM	60804
Nickel	ND	0.0033	0.010		mg/L	1	6/22/2021 2:33:38 PM	60804
Potassium	0.16	0.16	1.0	J	mg/L	1	6/22/2021 2:33:38 PM	60804
Silver	ND	0.0013	0.0050		mg/L	1	6/22/2021 2:33:38 PM	60804
Sodium	0.65	0.19	1.0	J	mg/L	1	6/22/2021 2:33:38 PM	60804
Zinc	ND	0.0064	0.010		mg/L	1	6/22/2021 2:33:38 PM	60804
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/22/2021 4:10:25 PM	60804
Arsenic	ND	0.00013	0.0010		mg/L	1	6/22/2021 4:10:25 PM	60804
Lead	ND	0.000061	0.00050		mg/L	1	6/22/2021 4:10:25 PM	60804
Selenium	ND	0.00037	0.0010		mg/L	1	6/22/2021 4:10:25 PM	60804
Thallium	ND	0.00025	0.00025		mg/L	1	6/22/2021 4:10:25 PM	60804
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 2:25:53 PM	60773

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 10:40:00 AM
Lab ID: 2106976-006F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/18/2021 12:45:06 PM	B79194
Barium	ND	0.0011	0.0020		mg/L	1	6/18/2021 12:45:06 PM	B79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 12:45:06 PM	B79194
Boron	ND	0.0067	0.040		mg/L	1	6/18/2021 12:45:06 PM	B79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 12:45:06 PM	B79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 12:45:06 PM	B79194
Cobalt	ND	0.0024	0.0060		mg/L	1	6/18/2021 12:45:06 PM	B79194
Copper	ND	0.0035	0.0060		mg/L	1	6/18/2021 12:45:06 PM	B79194
Iron	ND	0.010	0.020		mg/L	1	6/18/2021 12:45:06 PM	B79194
Manganese	ND	0.00058	0.0020		mg/L	1	6/18/2021 12:45:06 PM	B79194
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/18/2021 12:45:06 PM	B79194
Nickel	ND	0.0033	0.010		mg/L	1	6/18/2021 12:45:06 PM	B79194
Silver	ND	0.0013	0.0050		mg/L	1	6/18/2021 12:45:06 PM	B79194
Zinc	0.0094	0.0060	0.010	J	mg/L	1	6/18/2021 12:45:06 PM	B79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/23/2021 5:51:58 PM	C79314
Arsenic	ND	0.00012	0.0010		mg/L	1	6/21/2021 9:58:36 PM	C79234
Lead	ND	0.000057	0.00050		mg/L	1	6/21/2021 9:58:36 PM	C79234
Selenium	ND	0.00034	0.0010		mg/L	1	6/21/2021 9:58:36 PM	C79234
Thallium	ND	0.00025	0.00025		mg/L	1	6/21/2021 9:58:36 PM	C79234
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 11:21:03 AM	61092

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 8:20:00 AM
Lab ID: 2106976-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.30	0.23	1.0	J	µg/L	1	6/24/2021 7:42:35 PM	R79410
Toluene	0.26	0.20	1.0	J	µg/L	1	6/24/2021 7:42:35 PM	R79410
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Naphthalene	ND	0.28	2.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Acetone	2.4	2.3	10	J	µg/L	1	6/24/2021 7:42:35 PM	R79410
Bromobenzene	ND	0.28	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Bromodichloromethane	0.21	0.20	1.0	J	µg/L	1	6/24/2021 7:42:35 PM	R79410
Bromoform	ND	0.31	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Bromomethane	ND	1.6	3.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
2-Butanone	2.2	1.1	10	J	µg/L	1	6/24/2021 7:42:35 PM	R79410
Carbon disulfide	ND	0.44	10		µg/L	1	6/24/2021 7:42:35 PM	R79410
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Chloroethane	ND	0.38	2.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Chloroform	ND	0.13	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Chloromethane	ND	0.40	3.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Dibromomethane	ND	0.31	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021 8:20:00 AM
Lab ID: 2106976-007A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
2-Hexanone	ND	1.8	10		µg/L	1	6/24/2021 7:42:35 PM	R79410
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/24/2021 7:42:35 PM	R79410
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Styrene	ND	0.13	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/24/2021 7:42:35 PM	R79410
Xylenes, Total	ND	0.55	1.5		µg/L	1	6/24/2021 7:42:35 PM	R79410
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	6/24/2021 7:42:35 PM	R79410
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	6/24/2021 7:42:35 PM	R79410
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	6/24/2021 7:42:35 PM	R79410
Surr: Toluene-d8	100	0	70-130		%Rec	1	6/24/2021 7:42:35 PM	R79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.028	0.050		mg/L	1	6/24/2021 7:42:35 PM	G79410
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	6/24/2021 7:42:35 PM	G79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021
Lab ID: 2106976-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	1500	23	100		µg/L	100	6/24/2021 8:09:48 PM	R79410
Toluene	24	2.0	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Ethylbenzene	330	2.1	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Methyl tert-butyl ether (MTBE)	34	3.9	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,2,4-Trimethylbenzene	100	1.2	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,3,5-Trimethylbenzene	ND	1.8	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,2-Dichloroethane (EDC)	6.1	2.2	5.0		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Naphthalene	5.7	2.8	20	J	µg/L	10	6/24/2021 8:37:04 PM	R79410
1-Methylnaphthalene	24	8.4	40	J	µg/L	10	6/24/2021 8:37:04 PM	R79410
2-Methylnaphthalene	ND	6.9	40		µg/L	10	6/24/2021 8:37:04 PM	R79410
Acetone	ND	23	100		µg/L	10	6/24/2021 8:37:04 PM	R79410
Bromobenzene	ND	2.8	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Bromodichloromethane	ND	2.0	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Bromoform	ND	3.1	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Bromomethane	ND	16	30		µg/L	10	6/24/2021 8:37:04 PM	R79410
2-Butanone	ND	11	100		µg/L	10	6/24/2021 8:37:04 PM	R79410
Carbon disulfide	ND	4.4	100		µg/L	10	6/24/2021 8:37:04 PM	R79410
Carbon Tetrachloride	ND	1.8	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Chlorobenzene	ND	1.4	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Chloroethane	ND	3.8	20		µg/L	10	6/24/2021 8:37:04 PM	R79410
Chloroform	ND	1.3	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Chloromethane	ND	4.0	30		µg/L	10	6/24/2021 8:37:04 PM	R79410
2-Chlorotoluene	ND	1.3	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
4-Chlorotoluene	ND	5.1	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
cis-1,2-DCE	ND	3.9	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	6/24/2021 8:37:04 PM	R79410
Dibromochloromethane	ND	2.8	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Dibromomethane	ND	3.1	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Dichlorodifluoromethane	ND	4.4	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,1-Dichloroethane	14	2.7	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,1-Dichloroethene	4.6	1.3	10	J	µg/L	10	6/24/2021 8:37:04 PM	R79410
1,2-Dichloropropane	ND	1.3	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,3-Dichloropropane	ND	1.8	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
2,2-Dichloropropane	ND	2.6	20		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,1-Dichloropropene	ND	1.8	10		µg/L	10	6/24/2021 8:37:04 PM	R79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021
Lab ID: 2106976-008A
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	3.3	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
2-Hexanone	ND	18	100		µg/L	10	6/24/2021 8:37:04 PM	R79410
Isopropylbenzene	19	1.8	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
4-Isopropyltoluene	ND	2.0	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
4-Methyl-2-pentanone	ND	11	100		µg/L	10	6/24/2021 8:37:04 PM	R79410
Methylene Chloride	5.5	4.0	30	J	µg/L	10	6/24/2021 8:37:04 PM	R79410
n-Butylbenzene	4.3	2.5	30	J	µg/L	10	6/24/2021 8:37:04 PM	R79410
n-Propylbenzene	49	1.8	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
sec-Butylbenzene	ND	6.1	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Styrene	ND	1.3	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
tert-Butylbenzene	ND	2.4	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	6/24/2021 8:37:04 PM	R79410
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
trans-1,2-DCE	ND	4.9	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,2,3-Trichlorobenzene	ND	1.3	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,1,2-Trichloroethane	ND	1.9	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Trichlorofluoromethane	ND	0.92	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	6/24/2021 8:37:04 PM	R79410
Vinyl chloride	15	2.0	10		µg/L	10	6/24/2021 8:37:04 PM	R79410
Xylenes, Total	62	5.5	15		µg/L	10	6/24/2021 8:37:04 PM	R79410
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	10	6/24/2021 8:37:04 PM	R79410
Surr: 4-Bromofluorobenzene	109	0	70-130		%Rec	10	6/24/2021 8:37:04 PM	R79410
Surr: Dibromofluoromethane	98.7	0	70-130		%Rec	10	6/24/2021 8:37:04 PM	R79410
Surr: Toluene-d8	98.5	0	70-130		%Rec	10	6/24/2021 8:37:04 PM	R79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	5.2	0.28	0.50		mg/L	10	6/24/2021 8:37:04 PM	G79410
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	10	6/24/2021 8:37:04 PM	G79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021
Lab ID: 2106976-008B
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	0.0056	0.0034	0.0093	J	µg/L	1	6/23/2021 4:05:43 AM	60809

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021
Lab ID: 2106976-008C
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **TOM**	
Diesel Range Organics (DRO)	1.5	0.016	0.064		mg/L	1	6/24/2021 11:18:44 AM	60769
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	6/24/2021 11:18:44 AM	60769
Surr: DNOP	73.6	0	15-142		%Rec	1	6/24/2021 11:18:44 AM	60769

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021
Lab ID: 2106976-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Azobenzene	ND	0.55	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Benzoic acid	ND	1.1	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Benzyl alcohol	ND	0.68	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Bis(2-ethylhexyl)phthalate	5.4	4.5	10	J	µg/L	1	6/24/2021 4:29:46 PM	60820
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Carbazole	ND	0.56	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
4-Chloroaniline	ND	0.53	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
2-Chlorophenol	ND	0.62	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	6/24/2021 4:29:46 PM	60820
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	6/24/2021 4:29:46 PM	60820
Dibenzofuran	ND	0.38	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Diethyl phthalate	ND	3.9	10		µg/L	1	6/24/2021 4:29:46 PM	60820
Dimethyl phthalate	ND	2.0	10		µg/L	1	6/24/2021 4:29:46 PM	60820
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Hexachloroethane	ND	0.45	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Isophorone	ND	0.40	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
2-Methylphenol	ND	0.51	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
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H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021
Lab ID: 2106976-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
2-Nitroaniline	ND	0.31	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
3-Nitroaniline	ND	1.6	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
4-Nitroaniline	ND	0.47	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Nitrobenzene	ND	0.51	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
2-Nitrophenol	ND	0.47	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
4-Nitrophenol	ND	0.28	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Pentachlorophenol	ND	0.59	20		µg/L	1	6/24/2021 4:29:46 PM	60820
Phenol	5.9	0.33	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Pyridine	ND	0.93	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	6/24/2021 4:29:46 PM	60820
Surr: 2-Fluorophenol	0	0	15-88.8	S	%Rec	1	6/24/2021 4:29:46 PM	60820
Surr: Phenol-d5	15.1	0	15-71.9		%Rec	1	6/24/2021 4:29:46 PM	60820
Surr: 2,4,6-Tribromophenol	3.21	0	15-97.4	S	%Rec	1	6/24/2021 4:29:46 PM	60820
Surr: Nitrobenzene-d5	55.6	0	15-117		%Rec	1	6/24/2021 4:29:46 PM	60820
Surr: 2-Fluorobiphenyl	56.2	0	15-100		%Rec	1	6/24/2021 4:29:46 PM	60820
Surr: 4-Terphenyl-d14	93.2	0	15-120		%Rec	1	6/24/2021 4:29:46 PM	60820
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	2.9	0.034	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
1-Methylnaphthalene	16	0.024	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
Acenaphthylene	ND	0.043	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
Acenaphthene	0.50	0.031	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
Fluorene	0.48	0.031	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
Phenanthrene	0.16	0.057	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
Anthracene	ND	0.034	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
Fluoranthene	ND	0.10	0.20		µg/L	1	7/8/2021 3:51:00 PM	60889
Pyrene	0.28	0.16	0.20		µg/L	1	7/8/2021 3:51:00 PM	60889
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
Chrysene	ND	0.024	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	7/8/2021 3:51:00 PM	60889
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	7/8/2021 3:51:00 PM	60889
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	7/8/2021 3:51:00 PM	60889
Surr: Nitrobenzene-d5	12.0	0	26.3-112	S	%Rec	1	7/8/2021 3:51:00 PM	60889
Surr: 2-Fluorobiphenyl	46.5	0	21.1-110		%Rec	1	7/8/2021 3:51:00 PM	60889

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021
Lab ID: 2106976-008D
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 4-Terphenyl-d14	92.0	0	17.6-167		%Rec	1	7/8/2021 3:51:00 PM	60889

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021
Lab ID: 2106976-008E
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.28	0.50		mg/L	5	6/18/2021 6:07:33 PM	R79216
Chloride	3000	120	250	*	mg/L	500	6/30/2021 5:38:41 PM	R79498
Nitrogen, Nitrite (As N)	ND	0.29	2.0		mg/L	20	6/18/2021 6:19:54 PM	R79216
Bromide	1.4	0.25	0.50		mg/L	5	6/18/2021 6:07:33 PM	R79216
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	6/18/2021 6:07:33 PM	R79216
Phosphorus, Orthophosphate (As P)	ND	1.2	2.5		mg/L	5	6/18/2021 6:07:33 PM	R79216
Sulfate	100	1.2	2.5		mg/L	5	6/18/2021 6:07:33 PM	R79216

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021
Lab ID: 2106976-008F
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.29	0.0074	0.020	*	mg/L	1	6/22/2021 2:35:10 PM	60804
Barium	0.37	0.0016	0.0030		mg/L	1	6/22/2021 2:35:10 PM	60804
Beryllium	ND	0.00088	0.0020		mg/L	1	6/22/2021 2:35:10 PM	60804
Boron	0.81	0.0074	0.040		mg/L	1	6/22/2021 2:35:10 PM	60804
Cadmium	ND	0.0015	0.0020		mg/L	1	6/22/2021 2:35:10 PM	60804
Calcium	630	2.3	20		mg/L	20	6/22/2021 2:38:09 PM	60804
Chromium	ND	0.0021	0.0060		mg/L	1	6/22/2021 2:35:10 PM	60804
Cobalt	0.0065	0.0024	0.0060		mg/L	1	6/22/2021 2:35:10 PM	60804
Copper	ND	0.0047	0.0060		mg/L	1	6/22/2021 2:35:10 PM	60804
Iron	2.0	0.064	0.25	*	mg/L	5	6/22/2021 2:36:32 PM	60804
Magnesium	110	0.34	5.0		mg/L	5	6/22/2021 2:36:32 PM	60804
Manganese	5.5	0.016	0.040	*	mg/L	20	6/22/2021 2:38:09 PM	60804
Molybdenum	ND	0.0065	0.0080		mg/L	1	6/22/2021 2:35:10 PM	60804
Nickel	0.017	0.0033	0.010		mg/L	1	6/22/2021 2:35:10 PM	60804
Potassium	4.3	0.16	1.0		mg/L	1	6/22/2021 2:35:10 PM	60804
Silver	0.0032	0.0013	0.0050	J	mg/L	1	6/22/2021 2:35:10 PM	60804
Sodium	1400	3.7	20		mg/L	20	6/22/2021 2:38:09 PM	60804
Zinc	ND	0.0064	0.010		mg/L	1	6/22/2021 2:35:10 PM	60804
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	6/22/2021 4:12:50 PM	60804
Arsenic	0.0014	0.00063	0.0050	J	mg/L	5	6/24/2021 12:32:07 PM	60804
Lead	0.00044	0.00031	0.0025	J	mg/L	5	6/24/2021 12:32:07 PM	60804
Selenium	ND	0.0019	0.0050		mg/L	5	6/24/2021 12:32:07 PM	60804
Thallium	ND	0.0012	0.0012		mg/L	5	6/24/2021 12:32:07 PM	60804
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	6/22/2021 2:28:17 PM	60773

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 6/17/2021
Project: GW Sampling 2nd Quarter
Collection Date: 6/17/2021
Lab ID: 2106976-008G
Matrix: Groundwater

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	6/18/2021 12:55:26 PM	B79194
Barium	0.37	0.0011	0.0020		mg/L	1	6/18/2021 12:55:26 PM	B79194
Beryllium	ND	0.00088	0.0020		mg/L	1	6/18/2021 12:55:26 PM	B79194
Boron	0.80	0.0067	0.040		mg/L	1	6/18/2021 12:55:26 PM	B79194
Cadmium	ND	0.0012	0.0020		mg/L	1	6/18/2021 12:55:26 PM	B79194
Chromium	ND	0.0020	0.0060		mg/L	1	6/18/2021 12:55:26 PM	B79194
Cobalt	0.0075	0.0024	0.0060		mg/L	1	6/18/2021 12:55:26 PM	B79194
Copper	ND	0.0035	0.0060		mg/L	1	6/18/2021 12:55:26 PM	B79194
Iron	0.89	0.010	0.020	*	mg/L	1	6/18/2021 12:55:26 PM	B79194
Manganese	5.3	0.0058	0.020	*	mg/L	10	6/18/2021 12:56:49 PM	B79194
Molybdenum	ND	0.0056	0.0080		mg/L	1	6/18/2021 12:55:26 PM	B79194
Nickel	0.017	0.0033	0.010		mg/L	1	6/18/2021 12:55:26 PM	B79194
Silver	0.0030	0.0013	0.0050	J	mg/L	1	6/18/2021 12:55:26 PM	B79194
Zinc	0.0086	0.0060	0.010	J	mg/L	1	6/18/2021 12:55:26 PM	B79194
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.0022	0.0050		mg/L	5	6/23/2021 6:06:11 PM	C79314
Arsenic	0.0010	0.00061	0.0050	J	mg/L	5	6/23/2021 6:06:11 PM	C79314
Lead	ND	0.00028	0.0025		mg/L	5	6/23/2021 6:06:11 PM	C79314
Selenium	ND	0.0017	0.0050		mg/L	5	6/23/2021 6:06:11 PM	C79314
Thallium	ND	0.0012	0.0012		mg/L	5	6/23/2021 6:06:11 PM	C79314
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	7/2/2021 11:23:28 AM	61093

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2106976-009A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	0.36	0.23	1.0	J	µg/L	1	6/24/2021 9:04:21 PM	R79410
Toluene	ND	0.20	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Ethylbenzene	ND	0.21	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,2-Dichloroethane (EDC)	ND	0.22	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Naphthalene	ND	0.28	2.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Acetone	ND	2.3	10		µg/L	1	6/24/2021 9:04:21 PM	R79410
Bromobenzene	ND	0.28	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Bromodichloromethane	ND	0.20	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Bromoform	ND	0.31	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Bromomethane	ND	1.6	3.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
2-Butanone	ND	1.1	10		µg/L	1	6/24/2021 9:04:21 PM	R79410
Carbon disulfide	ND	0.44	10		µg/L	1	6/24/2021 9:04:21 PM	R79410
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Chlorobenzene	ND	0.14	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Chloroethane	ND	0.38	2.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Chloroform	ND	0.13	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Chloromethane	ND	0.40	3.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
4-Chlorotoluene	ND	0.51	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Dibromochloromethane	ND	0.28	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Dibromomethane	ND	0.31	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Dichlorodifluoromethane	ND	0.44	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,1-Dichloroethene	ND	0.13	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,2-Dichloropropane	ND	0.13	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2106976-009A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Hexachlorobutadiene	ND	0.33	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
2-Hexanone	ND	1.8	10		µg/L	1	6/24/2021 9:04:21 PM	R79410
Isopropylbenzene	ND	0.18	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
4-Methyl-2-pentanone	ND	1.1	10		µg/L	1	6/24/2021 9:04:21 PM	R79410
Methylene Chloride	ND	0.40	3.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
n-Butylbenzene	ND	0.25	3.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
n-Propylbenzene	ND	0.18	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
sec-Butylbenzene	ND	0.61	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Styrene	ND	0.13	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
trans-1,2-DCE	ND	0.49	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,2,3-Trichlorobenzene	ND	0.13	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,1,2-Trichloroethane	ND	0.19	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Trichlorofluoromethane	ND	0.092	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Vinyl chloride	ND	0.20	1.0		µg/L	1	6/24/2021 9:04:21 PM	R79410
Xylenes, Total	ND	0.55	1.5		µg/L	1	6/24/2021 9:04:21 PM	R79410
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	6/24/2021 9:04:21 PM	R79410
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	6/24/2021 9:04:21 PM	R79410
Surr: Dibromofluoromethane	99.5	0	70-130		%Rec	1	6/24/2021 9:04:21 PM	R79410
Surr: Toluene-d8	101	0	70-130		%Rec	1	6/24/2021 9:04:21 PM	R79410
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.028	0.050		mg/L	1	6/24/2021 9:04:21 PM	G79410
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	6/24/2021 9:04:21 PM	G79410

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2106976**
Date Reported: **7/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: GW Sampling 2nd Quarter
Collection Date:
Lab ID: 2106976-009B
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **BRM**	
1,2-Dibromoethane	ND	0.0035	0.0094		µg/L	1	6/23/2021 4:20:53 AM	60809

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **MB-60804** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **60804** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783301** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: **LLLCS-60804** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **60804** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783302** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.011	0.020	0.01000	0	111	50	150			J
Barium	0.0013	0.0030	0.002000	0	63.8	50	150			J
Beryllium	0.0017	0.0020	0.002000	0	87.0	50	150			J
Boron	0.040	0.040	0.04000	0	99.8	50	150			J
Cadmium	0.0019	0.0020	0.002000	0	93.6	50	150			J
Calcium	0.50	1.0	0.5000	0	100	50	150			J
Chromium	0.0054	0.0060	0.006000	0	90.2	50	150			J
Cobalt	0.0067	0.0060	0.006000	0	111	50	150			
Copper	0.0061	0.0060	0.006000	0	102	50	150			
Iron	0.021	0.050	0.02000	0	105	50	150			J
Magnesium	0.50	1.0	0.5000	0	100	50	150			J
Manganese	0.0021	0.0020	0.002000	0	105	50	150			
Molybdenum	0.0094	0.0080	0.008000	0	118	50	150			
Nickel	0.0036	0.010	0.005000	0	71.9	50	150			J
Potassium	0.49	1.0	0.5000	0	98.2	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **LLLCS-60804** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **60804** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783302** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.0051	0.0050	0.005000	0	103	50	150			
Sodium	0.49	1.0	0.5000	0	98.0	50	150			J
Zinc	0.011	0.010	0.01000	0	113	50	150			

Sample ID: **LCS-60804** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **60804** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783303** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.57	0.020	0.5000	0	113	85	115			
Barium	0.50	0.0030	0.5000	0	101	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Boron	0.53	0.040	0.5000	0	106	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Calcium	50	1.0	50.00	0	100	85	115			
Chromium	0.50	0.0060	0.5000	0	101	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.1	85	115			
Copper	0.50	0.0060	0.5000	0	99.2	85	115			
Iron	0.51	0.050	0.5000	0	102	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Manganese	0.49	0.0020	0.5000	0	98.5	85	115			
Molybdenum	0.52	0.0080	0.5000	0	105	85	115			
Nickel	0.49	0.010	0.5000	0	98.3	85	115			
Potassium	51	1.0	50.00	0	103	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Sodium	51	1.0	50.00	0	102	85	115			
Zinc	0.50	0.010	0.5000	0	101	85	115			

Sample ID: **2106976-002FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-31** Batch ID: **60804** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784025** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.60	0.0030	0.5000	0.1149	96.5	70	130			
Beryllium	0.50	0.0020	0.5000	0	99.7	70	130			
Cadmium	0.47	0.0020	0.5000	0	94.8	70	130			
Chromium	0.49	0.0060	0.5000	0	97.1	70	130			
Cobalt	0.48	0.0060	0.5000	0.002697	94.8	70	130			
Copper	0.49	0.0060	0.5000	0	98.7	70	130			
Magnesium	67	1.0	50.00	19.35	96.0	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **2106976-002FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-31** Batch ID: **60804** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784025** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.51	0.0020	0.5000	0.03713	93.9	70	130			
Molybdenum	0.51	0.0080	0.5000	0	101	70	130			
Nickel	0.47	0.010	0.5000	0	93.1	70	130			
Potassium	52	1.0	50.00	1.406	102	70	130			
Silver	0.10	0.0050	0.1000	0	99.8	70	130			
Zinc	0.49	0.010	0.5000	0	98.8	70	130			

Sample ID: **2106976-002FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-31** Batch ID: **60804** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784026** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.65	0.0030	0.5000	0.1149	107	70	130	8.09	20	
Beryllium	0.55	0.0020	0.5000	0	111	70	130	10.3	20	
Cadmium	0.52	0.0020	0.5000	0	104	70	130	9.30	20	
Chromium	0.54	0.0060	0.5000	0	107	70	130	9.74	20	
Cobalt	0.52	0.0060	0.5000	0.002697	103	70	130	8.65	20	
Copper	0.54	0.0060	0.5000	0	108	70	130	9.33	20	
Magnesium	75	1.0	50.00	19.35	111	70	130	10.5	20	
Manganese	0.55	0.0020	0.5000	0.03713	103	70	130	8.98	20	
Molybdenum	0.56	0.0080	0.5000	0	112	70	130	10.1	20	
Nickel	0.52	0.010	0.5000	0	103	70	130	10.4	20	
Potassium	58	1.0	50.00	1.406	113	70	130	10.3	20	
Silver	0.11	0.0050	0.1000	0	109	70	130	8.98	20	
Zinc	0.54	0.010	0.5000	0	108	70	130	8.58	20	

Sample ID: **2106976-002FMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-31** Batch ID: **60804** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784028** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	2.2	0.10	0.5000	1.103	213	70	130			S
Boron	1.1	0.20	0.5000	0.6565	95.4	70	130			
Calcium	140	5.0	50.00	96.29	89.4	70	130			
Iron	1.1	0.25	0.5000	0.4338	124	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **2106976-002FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **MKTF-31** Batch ID: **60804** RunNo: **79254**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784029** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	2.2	0.10	0.5000	1.103	216	70	130	0.720	20	S
Boron	1.1	0.20	0.5000	0.6565	95.8	70	130	0.168	20	
Calcium	140	5.0	50.00	96.29	90.0	70	130	0.212	20	
Iron	1.1	0.25	0.5000	0.4338	125	70	130	0.472	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B79194** RunNo: **79194**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2779661** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B79194** RunNo: **79194**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2779663** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.0099	0.020	0.01000	0	99.4	50	150			J
Barium	0.0020	0.0020	0.002000	0	99.7	50	150			J
Beryllium	0.0024	0.0020	0.002000	0	118	50	150			
Boron	0.039	0.040	0.04000	0	96.7	50	150			J
Cadmium	0.0018	0.0020	0.002000	0	88.3	50	150			J
Chromium	0.0065	0.0060	0.006000	0	109	50	150			
Cobalt	0.0056	0.0060	0.006000	0	94.1	50	150			J
Copper	0.0061	0.0060	0.006000	0	101	50	150			
Iron	0.018	0.020	0.02000	0	88.9	50	150			J
Manganese	0.0021	0.0020	0.002000	0	106	50	150			
Molybdenum	0.0084	0.0080	0.008000	0	106	50	150			
Nickel	0.0040	0.010	0.005000	0	80.4	50	150			J
Silver	0.0045	0.0050	0.005000	0	89.0	50	150			J
Zinc	0.0091	0.010	0.01000	0	91.2	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B79194** RunNo: **79194**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2779664** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B79194** RunNo: **79194**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2779664** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	109	85	115			
Barium	0.50	0.0020	0.5000	0	99.7	85	115			
Beryllium	0.50	0.0020	0.5000	0	101	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.1	85	115			
Chromium	0.48	0.0060	0.5000	0	96.2	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.9	85	115			
Copper	0.48	0.0060	0.5000	0	95.0	85	115			
Iron	0.50	0.020	0.5000	0	99.4	85	115			
Manganese	0.48	0.0020	0.5000	0	96.1	85	115			
Molybdenum	0.52	0.0080	0.5000	0	103	85	115			
Nickel	0.48	0.010	0.5000	0	95.1	85	115			
Silver	0.094	0.0050	0.1000	0	94.2	85	115			
Zinc	0.52	0.010	0.5000	0	105	85	115			

Sample ID: **2106976-006FMS** SampType: **MS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 6/17/2021** Batch ID: **B79194** RunNo: **79194**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2779710** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	112	70	130			
Barium	0.51	0.0020	0.5000	0	102	70	130			
Beryllium	0.52	0.0020	0.5000	0	104	70	130			
Boron	0.53	0.040	0.5000	0	107	70	130			
Cadmium	0.50	0.0020	0.5000	0	101	70	130			
Chromium	0.49	0.0060	0.5000	0	98.1	70	130			
Cobalt	0.50	0.0060	0.5000	0	99.4	70	130			
Copper	0.49	0.0060	0.5000	0	97.0	70	130			
Iron	0.49	0.020	0.5000	0	98.8	70	130			
Manganese	0.49	0.0020	0.5000	0	97.5	70	130			
Molybdenum	0.51	0.0080	0.5000	0	103	70	130			
Nickel	0.49	0.010	0.5000	0	97.3	70	130			
Silver	0.095	0.0050	0.1000	0	94.8	70	130			

Sample ID: **2106976-006FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 6/17/2021** Batch ID: **B79194** RunNo: **79194**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2779714** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.55	0.020	0.5000	0	111	70	130	1.02	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **2106976-006FMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **EB 6/17/2021** Batch ID: **B79194** RunNo: **79194**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2779714** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	70	130	1.91	20	
Beryllium	0.52	0.0020	0.5000	0	104	70	130	0.000203	20	
Boron	0.52	0.040	0.5000	0	104	70	130	2.60	20	
Cadmium	0.50	0.0020	0.5000	0	99.6	70	130	1.30	20	
Chromium	0.48	0.0060	0.5000	0	96.8	70	130	1.42	20	
Cobalt	0.49	0.0060	0.5000	0	97.4	70	130	2.05	20	
Copper	0.49	0.0060	0.5000	0	97.1	70	130	0.0809	20	
Iron	0.49	0.020	0.5000	0	98.2	70	130	0.553	20	
Manganese	0.49	0.0020	0.5000	0	98.3	70	130	0.821	20	
Molybdenum	0.51	0.0080	0.5000	0	101	70	130	1.69	20	
Nickel	0.48	0.010	0.5000	0	95.1	70	130	2.32	20	
Silver	0.093	0.0050	0.1000	0	93.1	70	130	1.84	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **MB-60804** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **60804** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783851** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: **MSLLLCS-60804** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **60804** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783852** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00093	0.0010	0.001000	0	92.6	50	150			J
Arsenic	0.0011	0.0010	0.001000	0	107	50	150			
Lead	0.00050	0.00050	0.0005000	0	100	50	150			
Selenium	0.00091	0.0010	0.001000	0	90.5	50	150			J

Sample ID: **MSLCS-60804** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **60804** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783865** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.9	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.023	0.0010	0.02500	0	93.9	85	115			
Thallium	0.012	0.00025	0.01250	0	96.6	85	115			

Sample ID: **MSLLLCS-TL-60804** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **60804** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783866** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	0.00025	0.00025	0.0002500	0	101	50	150			

Sample ID: **2106976-001FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-2** Batch ID: **60804** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784465** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.027	0.0010	0.02500	0	107	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **2106976-001FMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-2** Batch ID: **60804** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784466** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.028	0.0010	0.02500	0	113	70	130	5.39	20	

Sample ID: **2106976-001FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-2** Batch ID: **60804** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784498** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.011	0.0025	0.01250	0.0006177	85.8	70	130			
Thallium	0.011	0.0012	0.01250	0	87.4	70	130			

Sample ID: **2106976-001FMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-2** Batch ID: **60804** RunNo: **79259**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2784499** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.0025	0.01250	0.0006177	87.6	70	130	1.92	20	
Thallium	0.011	0.0012	0.01250	0	88.5	70	130	1.30	20	

Sample ID: **2106976-001FMSLL** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-2** Batch ID: **60804** RunNo: **79341**
Prep Date: **6/21/2021** Analysis Date: **6/24/2021** SeqNo: **2788959** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.031	0.0050	0.02500	0.001012	122	70	130			
Selenium	0.026	0.0050	0.02500	0	103	70	130			

Sample ID: **2106976-001FMSDL** SampType: **MSD** TestCode: **EPA 200.8: Metals**
Client ID: **MKTF-2** Batch ID: **60804** RunNo: **79341**
Prep Date: **6/21/2021** Analysis Date: **6/24/2021** SeqNo: **2788960** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.031	0.0050	0.02500	0.001012	120	70	130	1.88	20	
Selenium	0.031	0.0050	0.02500	0	123	70	130	17.3	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C79234**	RunNo: **79234**
Prep Date:	Analysis Date: **6/21/2021**	SeqNo: **2782262** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C79234**	RunNo: **79234**
Prep Date:	Analysis Date: **6/21/2021**	SeqNo: **2782263** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0011	0.0010	0.001000	0	107	50	150			
Lead	0.00053	0.00050	0.0005000	0	107	50	150			
Selenium	0.0010	0.0010	0.001000	0	103	50	150			
Thallium	0.00051	0.00025	0.0005000	0	102	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C79234**	RunNo: **79234**
Prep Date:	Analysis Date: **6/21/2021**	SeqNo: **2782264** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.012	0.00050	0.01250	0	98.4	85	115			
Selenium	0.025	0.0010	0.02500	0	98.1	85	115			
Thallium	0.012	0.00025	0.01250	0	98.3	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C79314**	RunNo: **79314**
Prep Date:	Analysis Date: **6/23/2021**	SeqNo: **2785897** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **C79314** RunNo: **79314**
Prep Date: Analysis Date: **6/23/2021** SeqNo: **2785898** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00098	0.0010	0.001000	0	98.4	50	150			J
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.0010	0.0010	0.001000	0	104	50	150			
Thallium	0.00050	0.00025	0.0005000	0	101	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **C79314** RunNo: **79314**
Prep Date: Analysis Date: **6/23/2021** SeqNo: **2785899** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.0	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.4	85	115			
Lead	0.012	0.00050	0.01250	0	95.7	85	115			
Selenium	0.024	0.0010	0.02500	0	94.3	85	115			
Thallium	0.012	0.00025	0.01250	0	96.3	85	115			

Sample ID: **2106976-006FMSLL** SampType: **MS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB 6/17/2021** Batch ID: **C79314** RunNo: **79314**
Prep Date: Analysis Date: **6/23/2021** SeqNo: **2785987** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.12	0.0050	0.1250	0	98.2	70	130			

Sample ID: **2106976-006FMSDL** SampType: **MSD** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **EB 6/17/2021** Batch ID: **C79314** RunNo: **79314**
Prep Date: Analysis Date: **6/23/2021** SeqNo: **2785988** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.12	0.0050	0.1250	0	99.2	70	130	1.05	20	

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **B79406** RunNo: **79406**
Prep Date: Analysis Date: **6/25/2021** SeqNo: **2791112** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**

26-Jul-21

Client: Marathon

Project: GW Sampling 2nd Quarter

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B79406**	RunNo: **79406**
Prep Date:	Analysis Date: **6/25/2021**	SeqNo: **2791113** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00065	0.0010	0.001000	0	65.3	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B79406**	RunNo: **79406**
Prep Date:	Analysis Date: **6/25/2021**	SeqNo: **2791114** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.025	0.0010	0.02500	0	98.9	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C79446**	RunNo: **79446**
Prep Date:	Analysis Date: **6/29/2021**	SeqNo: **2792593** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C79446**	RunNo: **79446**
Prep Date:	Analysis Date: **6/29/2021**	SeqNo: **2792594** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C79446**	RunNo: **79446**
Prep Date:	Analysis Date: **6/29/2021**	SeqNo: **2792595** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	94.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **MB-60773** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **60773** RunNo: **79265**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783671** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-60773** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **60773** RunNo: **79265**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783672** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00011	0.00020	0.0001500	0	76.5	50	150			J

Sample ID: **LCS-60773** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **60773** RunNo: **79265**
Prep Date: **6/21/2021** Analysis Date: **6/22/2021** SeqNo: **2783673** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.9	85	115			

Sample ID: **MB-61092** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **61092** RunNo: **79549**
Prep Date: **7/1/2021** Analysis Date: **7/2/2021** SeqNo: **2797411** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-61092** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **61092** RunNo: **79549**
Prep Date: **7/1/2021** Analysis Date: **7/2/2021** SeqNo: **2797412** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00013	0.00020	0.0001500	0	87.7	50	150			J

Sample ID: **LCS-61092** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **61092** RunNo: **79549**
Prep Date: **7/1/2021** Analysis Date: **7/2/2021** SeqNo: **2797413** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.00020	0.005000	0	94.0	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **MB-61093** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **61093** RunNo: **79549**
Prep Date: **7/1/2021** Analysis Date: **7/2/2021** SeqNo: **2797414** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-61093** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **61093** RunNo: **79549**
Prep Date: **7/1/2021** Analysis Date: **7/2/2021** SeqNo: **2797415** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00011	0.00020	0.0001500	0	72.8	50	150			J

Sample ID: **LCS-61093** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **61093** RunNo: **79549**
Prep Date: **7/1/2021** Analysis Date: **7/2/2021** SeqNo: **2797416** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0046	0.00020	0.005000	0	92.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **MB** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R79216** RunNo: **79216**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2781073** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R79216** RunNo: **79216**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2781075** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	101	90	110			
Chloride	4.8	0.50	5.000	0	95.8	90	110			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.4	90	110			
Bromide	2.5	0.10	2.500	0	98.1	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	102	90	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.1	90	110			
Sulfate	9.8	0.50	10.00	0	98.4	90	110			

Sample ID: **2106976-006DMS** SampType: **ms** TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 6/17/2021** Batch ID: **R79216** RunNo: **79216**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2781099** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	6.2	0.50	5.000	1.561	92.7	84.2	117			
Nitrogen, Nitrite (As N)	0.94	0.10	1.000	0	93.6	75.5	113			
Bromide	2.4	0.10	2.500	0	97.1	85.9	106			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0.08000	101	86.8	110			
Phosphorus, Orthophosphate (As P	4.6	0.50	5.000	0	92.5	70.5	118			
Sulfate	9.8	0.50	10.00	0	98.0	83.3	112			

Sample ID: **2106976-006DMSD** SampType: **msd** TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 6/17/2021** Batch ID: **R79216** RunNo: **79216**
Prep Date: Analysis Date: **6/18/2021** SeqNo: **2781100** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	6.2	0.50	5.000	1.561	93.1	84.2	117	0.308	20	
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	94.6	75.5	113	1.07	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **2106976-006DMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **EB 6/17/2021**	Batch ID: **R79216**	RunNo: **79216**
Prep Date:	Analysis Date: **6/18/2021**	SeqNo: **2781100** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.4	0.10	2.500	0	97.9	85.9	106	0.813	20	
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0.08000	101	86.8	110	0.794	20	
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.6	70.5	118	1.13	20	
Sulfate	9.9	0.50	10.00	0	98.7	83.3	112	0.652	20	

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R79498**	RunNo: **79498**
Prep Date:	Analysis Date: **6/30/2021**	SeqNo: **2794859** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R79498**	RunNo: **79498**
Prep Date:	Analysis Date: **6/30/2021**	SeqNo: **2794860** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	92.7	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **MB-60809** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **60809** RunNo: **79282**
Prep Date: **6/22/2021** Analysis Date: **6/22/2021** SeqNo: **2784738** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-60809** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **60809** RunNo: **79282**
Prep Date: **6/22/2021** Analysis Date: **6/22/2021** SeqNo: **2784741** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	98.1	70	130			

Sample ID: **LCSD-60809** SampType: **LCSD** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02** Batch ID: **60809** RunNo: **79282**
Prep Date: **6/22/2021** Analysis Date: **6/22/2021** SeqNo: **2784742** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.098	0.010	0.1000	0	97.8	70	130	0.361	20	

Sample ID: **MB-60809** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **60809** RunNo: **79282**
Prep Date: **6/22/2021** Analysis Date: **6/22/2021** SeqNo: **2784829** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **MB-60769** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **60769** RunNo: **79239**
Prep Date: **6/21/2021** Analysis Date: **6/24/2021** SeqNo: **2788531** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.064								
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.038		0.03750		101	15	142			

Sample ID: **LCS-60769** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **60769** RunNo: **79239**
Prep Date: **6/21/2021** Analysis Date: **6/24/2021** SeqNo: **2788532** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.096	0.064	0.1875	0	51.1	21.1	126			
Surr: DNOP	0.018		0.01875		97.9	15	142			

Sample ID: **LCSD-60769** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **60769** RunNo: **79239**
Prep Date: **6/21/2021** Analysis Date: **6/24/2021** SeqNo: **2788533** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.077	0.064	0.1875	0	41.3	21.1	126	21.3	20	R
Surr: DNOP	0.015		0.01875		81.0	15	142	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R79410** RunNo: **79410**
Prep Date: Analysis Date: **6/24/2021** SeqNo: **2791224** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	21	1.0	20.00	0	104	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	104	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	106	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.8	70	130			
Surr: Toluene-d8	9.9		10.00		99.1	70	130			

Sample ID: **2106976-001a ms** SampType: **MS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-2** Batch ID: **R79410** RunNo: **79410**
Prep Date: Analysis Date: **6/24/2021** SeqNo: **2791228** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1400	5.0	100.0	1381	26.8	70	130			ES
Toluene	130	5.0	100.0	24.61	108	70	130			
Chlorobenzene	110	5.0	100.0	0	111	70	130			
1,1-Dichloroethene	95	5.0	100.0	2.747	92.2	70	130			
Trichloroethene (TCE)	99	5.0	100.0	0	99.1	70	130			
Surr: 1,2-Dichloroethane-d4	51		50.00		101	70	130			
Surr: 4-Bromofluorobenzene	52		50.00		104	70	130			
Surr: Dibromofluoromethane	48		50.00		95.5	70	130			
Surr: Toluene-d8	50		50.00		99.4	70	130			

Sample ID: **2106976-001a msd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MKTF-2** Batch ID: **R79410** RunNo: **79410**
Prep Date: Analysis Date: **6/24/2021** SeqNo: **2791229** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1400	5.0	100.0	1381	43.3	70	130	1.16	20	ES
Toluene	130	5.0	100.0	24.61	104	70	130	2.62	20	
Chlorobenzene	110	5.0	100.0	0	109	70	130	1.90	20	
1,1-Dichloroethene	93	5.0	100.0	2.747	90.5	70	130	1.85	20	
Trichloroethene (TCE)	99	5.0	100.0	0	99.2	70	130	0.143	20	
Surr: 1,2-Dichloroethane-d4	48		50.00		96.1	70	130	0	0	
Surr: 4-Bromofluorobenzene	53		50.00		107	70	130	0	0	
Surr: Dibromofluoromethane	48		50.00		95.7	70	130	0	0	
Surr: Toluene-d8	48		50.00		96.4	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R79410**	RunNo: **79410**	
Prep Date:	Analysis Date: **6/24/2021**	SeqNo: **2791281**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R79410**	RunNo: **79410**
Prep Date:	Analysis Date: **6/24/2021**	SeqNo: **2791281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **lcs-60820** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **60820** RunNo: **79350**
Prep Date: **6/22/2021** Analysis Date: **6/24/2021** SeqNo: **2787433** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	130	5.0	200.0	0	66.3	28.3	103			
2-Chlorophenol	130	5.0	200.0	0	67.2	29.3	105			
1,4-Dichlorobenzene	61	5.0	100.0	0	60.7	15	87.6			
2,4-Dinitrotoluene	55	5.0	100.0	0	55.1	23.6	90.9			
N-Nitrosodi-n-propylamine	63	5.0	100.0	0	63.4	23.1	94.6			
4-Nitrophenol	88	5.0	200.0	0	44.0	15	77			
Pentachlorophenol	140	20	200.0	0	70.6	21	111			
Phenol	88	5.0	200.0	0	44.0	16.8	70.5			
1,2,4-Trichlorobenzene	57	5.0	100.0	0	57.3	15	88.2			
Surr: 2-Fluorophenol	120		200.0		58.9	15	88.8			
Surr: Phenol-d5	99		200.0		49.3	15	71.9			
Surr: 2,4,6-Tribromophenol	140		200.0		72.0	15	97.4			
Surr: Nitrobenzene-d5	66		100.0		66.0	15	117			
Surr: 2-Fluorobiphenyl	64		100.0		63.6	15	100			
Surr: 4-Terphenyl-d14	110		100.0		107	15	120			

Sample ID: **lcsd-60820** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **60820** RunNo: **79350**
Prep Date: **6/22/2021** Analysis Date: **6/24/2021** SeqNo: **2787434** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	130	5.0	200.0	0	63.1	28.3	103	4.94	44.7	
2-Chlorophenol	130	5.0	200.0	0	64.7	29.3	105	3.77	35.6	
1,4-Dichlorobenzene	58	5.0	100.0	0	57.8	15	87.6	4.78	30.4	
2,4-Dinitrotoluene	57	5.0	100.0	0	57.5	23.6	90.9	4.28	53.1	
N-Nitrosodi-n-propylamine	61	5.0	100.0	0	61.1	23.1	94.6	3.68	31.1	
4-Nitrophenol	96	5.0	200.0	0	48.2	15	77	9.11	52.4	
Pentachlorophenol	140	20	200.0	0	70.0	21	111	0.852	71.6	
Phenol	88	5.0	200.0	0	43.8	16.8	70.5	0.388	37.2	
1,2,4-Trichlorobenzene	60	5.0	100.0	0	59.9	15	88.2	4.38	31.8	
Surr: 2-Fluorophenol	79		200.0		39.7	15	88.8	0	0	
Surr: Phenol-d5	64		200.0		32.1	15	71.9	0	0	
Surr: 2,4,6-Tribromophenol	120		200.0		60.1	15	97.4	0	0	
Surr: Nitrobenzene-d5	52		100.0		51.9	15	117	0	0	
Surr: 2-Fluorobiphenyl	48		100.0		48.0	15	100	0	0	
Surr: 4-Terphenyl-d14	94		100.0		94.1	15	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **MB-60820** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **60820** RunNo: **79350**
Prep Date: **6/22/2021** Analysis Date: **6/24/2021** SeqNo: **2787450** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Azobenzene	ND	5.0								
Benzoic acid	ND	5.0								
Benzyl alcohol	ND	5.0								
Bis(2-chloroethoxy)methane	ND	5.0								
Bis(2-chloroethyl)ether	ND	5.0								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	5.1	10								J
4-Bromophenyl phenyl ether	ND	5.0								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
2-Chloronaphthalene	ND	5.0								
2-Chlorophenol	ND	5.0								
4-Chlorophenyl phenyl ether	ND	5.0								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	6.6	20								J
Dibenzofuran	ND	5.0								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
3,3´-Dichlorobenzidine	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	5.0								
4,6-Dinitro-2-methylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	5.0								
Hexachlorobenzene	ND	5.0								
Hexachlorobutadiene	ND	5.0								
Hexachlorocyclopentadiene	ND	5.0								
Hexachloroethane	ND	5.0								
Isophorone	ND	5.0								
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
N-Nitrosodi-n-propylamine	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **MB-60820** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **60820** RunNo: **79350**
Prep Date: **6/22/2021** Analysis Date: **6/24/2021** SeqNo: **2787450** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	5.0								
2-Nitroaniline	ND	5.0								
3-Nitroaniline	ND	5.0								
4-Nitroaniline	ND	5.0								
Nitrobenzene	ND	5.0								
2-Nitrophenol	ND	5.0								
4-Nitrophenol	ND	5.0								
Pentachlorophenol	ND	20								
Phenol	ND	5.0								
Pyridine	ND	5.0								
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	120		200.0		62.5	15	88.8			
Surr: Phenol-d5	100		200.0		50.6	15	71.9			
Surr: 2,4,6-Tribromophenol	180		200.0		90.6	15	97.4			
Surr: Nitrobenzene-d5	69		100.0		68.9	15	117			
Surr: 2-Fluorobiphenyl	69		100.0		69.1	15	100			
Surr: 4-Terphenyl-d14	99		100.0		99.0	15	120			

Sample ID: **MB-61129** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **61129** RunNo: **79736**
Prep Date: **7/6/2021** Analysis Date: **7/12/2021** SeqNo: **2804797** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	130		200.0		62.5	15	88.8			
Surr: Phenol-d5	93		200.0		46.5	15	71.9			
Surr: 2,4,6-Tribromophenol	150		200.0		74.4	15	97.4			
Surr: Nitrobenzene-d5	78		100.0		77.6	15	117			
Surr: 2-Fluorobiphenyl	71		100.0		71.1	15	100			
Surr: 4-Terphenyl-d14	110		100.0		111	15	120			

Sample ID: **LCS-61129** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **61129** RunNo: **79736**
Prep Date: **7/6/2021** Analysis Date: **7/12/2021** SeqNo: **2804798** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	100		200.0		52.3	15	88.8			
Surr: Phenol-d5	83		200.0		41.5	15	71.9			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **LCS-61129** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **61129** RunNo: **79736**
Prep Date: **7/6/2021** Analysis Date: **7/12/2021** SeqNo: **2804798** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	130		200.0		66.2	15	97.4			
Surr: Nitrobenzene-d5	69		100.0		68.6	15	117			
Surr: 2-Fluorobiphenyl	67		100.0		66.8	15	100			
Surr: 4-Terphenyl-d14	100		100.0		105	15	120			

Sample ID: **LCSD-61129** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **61129** RunNo: **79736**
Prep Date: **7/6/2021** Analysis Date: **7/12/2021** SeqNo: **2804799** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	120		200.0		58.9	15	88.8	0	0	
Surr: Phenol-d5	92		200.0		46.1	15	71.9	0	0	
Surr: 2,4,6-Tribromophenol	150		200.0		76.6	15	97.4	0	0	
Surr: Nitrobenzene-d5	77		100.0		77.3	15	117	0	0	
Surr: 2-Fluorobiphenyl	74		100.0		74.0	15	100	0	0	
Surr: 4-Terphenyl-d14	100		100.0		102	15	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **mb-60807** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **60807** RunNo: **79330**
Prep Date: **6/22/2021** Analysis Date: **6/23/2021** SeqNo: **2786774** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthylene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.10								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.10								
Benzo(g,h,i)perylene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	2.5		4.000		63.5	26.3	112			
Surr: 2,4,6-Tribromophenol	5.5		8.000		69.0	27.7	118			
Surr: 2-Fluorobiphenyl	2.1		4.000		53.5	21.1	110			
Surr: 4-Terphenyl-d14	3.6		4.000		91.0	17.6	167			

Sample ID: **lcs-60807** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **60807** RunNo: **79330**
Prep Date: **6/22/2021** Analysis Date: **6/23/2021** SeqNo: **2786775** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.2	0.10	2.000	0	58.0	26.5	90.9			
1-Methylnaphthalene	1.2	0.10	2.000	0	60.0	27.9	88.2			
2-Methylnaphthalene	1.2	0.10	2.000	0	60.0	29.2	87.5			
Acenaphthylene	1.4	0.10	2.000	0	69.0	30	92.9			
Acenaphthene	1.4	0.10	2.000	0	69.0	25.6	93.9			
Fluorene	1.5	0.10	2.000	0	77.0	27.4	95.1			
Phenanthrene	1.7	0.10	2.000	0	84.0	25.1	104			
Anthracene	1.7	0.10	2.000	0	84.0	30.1	100			
Fluoranthene	1.9	0.20	2.000	0	94.0	41.6	126			
Pyrene	1.9	0.20	2.000	0	93.0	34.5	112			
Benz(a)anthracene	2.0	0.10	2.000	0	98.0	43.9	132			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **lcs-60807** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **60807** RunNo: **79330**
Prep Date: **6/22/2021** Analysis Date: **6/23/2021** SeqNo: **2786775** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	1.8	0.10	2.000	0	88.0	39.8	118			
Benzo(b)fluoranthene	2.1	0.10	2.000	0	103	37.2	134			
Benzo(k)fluoranthene	1.8	0.10	2.000	0	88.0	43.8	122			
Benzo(a)pyrene	1.9	0.070	2.000	0	94.0	36.6	122			
Dibenz(a,h)anthracene	2.1	0.10	2.000	0	104	35.5	129			
Benzo(g,h,i)perylene	1.9	0.10	2.000	0	96.0	39.4	120			
Indeno(1,2,3-cd)pyrene	2.4	0.30	2.000	0	121	24.9	150			
Surr: Nitrobenzene-d5	3.5		5.000		70.4	26.3	112			
Surr: 2,4,6-Tribromophenol	8.0		10.00		79.6	27.7	118			
Surr: 2-Fluorobiphenyl	2.9		5.000		57.6	21.1	110			
Surr: 4-Terphenyl-d14	5.4		5.000		108	17.6	167			

Sample ID: **lcsd-60807** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **60807** RunNo: **79330**
Prep Date: **6/22/2021** Analysis Date: **6/23/2021** SeqNo: **2786776** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.2	0.10	2.000	0	61.0	26.5	90.9	5.04	37.6	
1-Methylnaphthalene	1.3	0.10	2.000	0	65.0	27.9	88.2	8.00	33.1	
2-Methylnaphthalene	1.3	0.10	2.000	0	63.0	29.2	87.5	4.88	35.4	
Acenaphthylene	1.6	0.10	2.000	0	78.0	30	92.9	12.2	31.7	
Acenaphthene	1.5	0.10	2.000	0	77.0	25.6	93.9	11.0	36.3	
Fluorene	1.7	0.10	2.000	0	86.0	27.4	95.1	11.0	32.2	
Phenanthrene	1.9	0.10	2.000	0	95.0	25.1	104	12.3	32.9	
Anthracene	1.9	0.10	2.000	0	93.0	30.1	100	10.2	31.5	
Fluoranthene	2.1	0.20	2.000	0	107	41.6	126	12.9	26.5	
Pyrene	2.1	0.20	2.000	0	104	34.5	112	11.2	23.3	
Benz(a)anthracene	2.2	0.10	2.000	0	110	43.9	132	11.5	29.5	
Chrysene	2.1	0.10	2.000	0	103	39.8	118	15.7	22.3	
Benzo(b)fluoranthene	2.4	0.10	2.000	0	119	37.2	134	14.4	25.2	
Benzo(k)fluoranthene	2.1	0.10	2.000	0	103	43.8	122	15.7	23.1	
Benzo(a)pyrene	2.2	0.070	2.000	0	108	36.6	122	13.9	22.4	
Dibenz(a,h)anthracene	2.4	0.10	2.000	0	120	35.5	129	14.3	23.7	
Benzo(g,h,i)perylene	2.2	0.10	2.000	0	112	39.4	120	15.4	22.9	
Indeno(1,2,3-cd)pyrene	2.8	0.30	2.000	0	140	24.9	150	14.6	26.6	
Surr: Nitrobenzene-d5	3.8		5.000		76.0	26.3	112	0	0	
Surr: 2,4,6-Tribromophenol	8.6		10.00		85.6	27.7	118	0	0	
Surr: 2-Fluorobiphenyl	2.9		5.000		58.8	21.1	110	0	0	
Surr: 4-Terphenyl-d14	6.3		5.000		127	17.6	167	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **mb-60889** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **60889** RunNo: **79678**
Prep Date: **6/24/2021** Analysis Date: **7/8/2021** SeqNo: **2802012** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthylene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.10								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.10								
Benzo(g,h,i)perylene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	2.2		4.000		54.0	26.3	112			
Surr: 2,4,6-Tribromophenol	3.8		8.000		48.0	27.7	118			
Surr: 2-Fluorobiphenyl	1.7		4.000		43.0	21.1	110			
Surr: 4-Terphenyl-d14	3.8		4.000		95.5	17.6	167			

Sample ID: **lcs-60889** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **60889** RunNo: **79678**
Prep Date: **6/24/2021** Analysis Date: **7/8/2021** SeqNo: **2802013** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.1	0.10	2.000	0	54.0	26.5	90.9			
1-Methylnaphthalene	1.1	0.10	2.000	0	54.0	27.9	88.2			
2-Methylnaphthalene	1.1	0.10	2.000	0	53.0	29.2	87.5			
Acenaphthylene	1.2	0.10	2.000	0	62.0	30	92.9			
Acenaphthene	1.2	0.10	2.000	0	61.0	25.6	93.9			
Fluorene	1.3	0.10	2.000	0	64.0	27.4	95.1			
Phenanthrene	1.4	0.10	2.000	0	69.0	25.1	104			
Anthracene	1.4	0.10	2.000	0	68.0	30.1	100			
Fluoranthene	1.7	0.20	2.000	0	87.0	41.6	126			
Pyrene	1.7	0.20	2.000	0	86.0	34.5	112			
Benz(a)anthracene	2.0	0.10	2.000	0	99.0	43.9	132			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **lcs-60889** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **60889** RunNo: **79678**
Prep Date: **6/24/2021** Analysis Date: **7/8/2021** SeqNo: **2802013** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	1.8	0.10	2.000	0	92.0	39.8	118			
Benzo(b)fluoranthene	2.2	0.10	2.000	0	108	37.2	134			
Benzo(k)fluoranthene	1.9	0.10	2.000	0	93.0	43.8	122			
Benzo(a)pyrene	1.9	0.070	2.000	0	97.0	36.6	122			
Dibenz(a,h)anthracene	2.2	0.10	2.000	0	108	35.5	129			
Benzo(g,h,i)perylene	2.0	0.10	2.000	0	102	39.4	120			
Indeno(1,2,3-cd)pyrene	2.6	0.30	2.000	0	129	24.9	150			
Surr: Nitrobenzene-d5	3.4		5.000		68.4	26.3	112			
Surr: 2,4,6-Tribromophenol	5.9		10.00		59.2	27.7	118			
Surr: 2-Fluorobiphenyl	2.8		5.000		56.0	21.1	110			
Surr: 4-Terphenyl-d14	5.8		5.000		116	17.6	167			

Sample ID: **lcsd-60889** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **60889** RunNo: **79678**
Prep Date: **6/24/2021** Analysis Date: **7/8/2021** SeqNo: **2802014** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.1	0.10	2.000	0	54.0	26.5	90.9	0	37.6	
1-Methylnaphthalene	1.1	0.10	2.000	0	54.0	27.9	88.2	0	33.1	
2-Methylnaphthalene	1.1	0.10	2.000	0	53.0	29.2	87.5	0	35.4	
Acenaphthylene	1.2	0.10	2.000	0	62.0	30	92.9	0	31.7	
Acenaphthene	1.2	0.10	2.000	0	60.0	25.6	93.9	1.65	36.3	
Fluorene	1.3	0.10	2.000	0	65.0	27.4	95.1	1.55	32.2	
Phenanthrene	1.4	0.10	2.000	0	71.0	25.1	104	2.86	32.9	
Anthracene	1.4	0.10	2.000	0	71.0	30.1	100	4.32	31.5	
Fluoranthene	1.9	0.20	2.000	0	94.0	41.6	126	7.73	26.5	
Pyrene	1.8	0.20	2.000	0	90.0	34.5	112	4.55	23.3	
Benz(a)anthracene	2.0	0.10	2.000	0	101	43.9	132	2.00	29.5	
Chrysene	1.9	0.10	2.000	0	95.0	39.8	118	3.21	22.3	
Benzo(b)fluoranthene	2.2	0.10	2.000	0	112	37.2	134	3.64	25.2	
Benzo(k)fluoranthene	1.9	0.10	2.000	0	94.0	43.8	122	1.07	23.1	
Benzo(a)pyrene	2.0	0.070	2.000	0	99.0	36.6	122	2.04	22.4	
Dibenz(a,h)anthracene	2.2	0.10	2.000	0	111	35.5	129	2.74	23.7	
Benzo(g,h,i)perylene	2.1	0.10	2.000	0	103	39.4	120	0.976	22.9	
Indeno(1,2,3-cd)pyrene	2.6	0.30	2.000	0	128	24.9	150	0.778	26.6	
Surr: Nitrobenzene-d5	3.3		5.000		65.6	26.3	112	0	0	
Surr: 2,4,6-Tribromophenol	5.9		10.00		58.8	27.7	118	0	0	
Surr: 2-Fluorobiphenyl	2.1		5.000		41.2	21.1	110	0	0	
Surr: 4-Terphenyl-d14	6.0		5.000		121	17.6	167	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106976**
26-Jul-21

Client: Marathon
Project: GW Sampling 2nd Quarter

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **G79410** RunNo: **79410**
Prep Date: Analysis Date: **6/24/2021** SeqNo: **2791328** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.53	0.050	0.5000	0	105	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			

Sample ID: **2106976-001a ms g** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-2** Batch ID: **G79410** RunNo: **79410**
Prep Date: Analysis Date: **6/24/2021** SeqNo: **2791332** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	7.2	0.25	2.500	5.132	84.4	70	130			
Surr: 4-Bromofluorobenzene	53		50.00		106	70	130			

Sample ID: **2106976-001a msd g** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-2** Batch ID: **G79410** RunNo: **79410**
Prep Date: Analysis Date: **6/24/2021** SeqNo: **2791333** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	6.9	0.25	2.500	5.132	72.1	70	130	4.32	20	
Surr: 4-Bromofluorobenzene	51		50.00		102	70	130	0	0	

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **G79410** RunNo: **79410**
Prep Date: Analysis Date: **6/24/2021** SeqNo: **2791392** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2106976** RcptNo: 1

Received By: **Kasandra Payan** **6/17/2021 4:52:00 PM**

Completed By: **Desiree Dominguez** **6/18/2021 7:46:09 AM**

Reviewed By: JR 6/18/21

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
   Samples were collected the same day and chilled.
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 21 (<2 or >12 unless noted)

Adjusted? No

Checked by: SPA 6.18.21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	8.2	Good				
2	7.5	Good				
3	11.6	Good				

Released to Imaging: 11/23/2022 10:23:25 AM
Received by OCD: 3/25/2022 3:35:30 PM

Chain of Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Marathon Petroleum Company	☒ Standard ☐ Rush
Mailing Address: 92 Giant Crossing Rd. Jamestown, NM 87347	Project Name: 2021 GW Sampling - ~~1st~~ 2nd Quarter
Phone #: 808-640-1823	Project #: 697-080-001
email or Fax#: bmcloughlin@trihydro.com	Project Manager: Brian McLoughlin
QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)	Sampler:
Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other	On Ice: ☑ Yes ☐ No
☒ EDD (Type)	# of Coolers: 3
	Cooler Temp(including CF): See Remarks

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2106976	8260 -VOCs	WQCC metals	GRO/DRO extended	Major Cations / Anions	Nitrate/Nitrite	8011 EDB	SVOC (includes 1,4 Dioxane on reques	1,4 Dioxane only	BTEX+MTBE	BOD	COD	Cyanide	TDS/TSS	Gen Chem	PFAS	e-coli
6/17	8:20	water	MKTF-2			-001	X	X	X	X		X	X									
6/17	9:10	water	MKTF-31			-002	X	X	X	X		X	X									
6/17	9:25	water	MKTF-25			-003	X	X	X	X		X	X									
6/17	10:10	water	MKTF-40			-004	X	X	X	X		X	X									
6/17	10:40	water	MKTF-11			-005	X	X	X	X			X									
6/17	10:40	water	EB 6/17/2021			-006	X	X	X	X			X									
6/17	8:20	water	FB 6/17/2021			-007	X															
6/17		water	Dup 6/17/2021			-008	X	X	X	X		X	X									
		water																				
		water																				
		water																				
		water																				

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
6/17/21	13:00			Carrier	6/17/21	16:52

Remarks: T° 8.2-0=8.2, 7.5-0=7.5, 11.6-011.6=t KPG 6/17/21

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

November 03, 2021

Brian McLoughlin

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL:
FAX

RE: 2021 GW Sampling 3rd Quarter OrderNo.: 2109786

Dear Brian McLoughlin:

Hall Environmental Analysis Laboratory received 11 sample(s) on 9/15/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Toluene	ND	0.20	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Naphthalene	ND	0.50	2.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Acetone	3.5	2.5	10	J	µg/L	1	9/17/2021 4:13:10 AM	R81355
Bromobenzene	ND	0.28	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Bromodichloromethane	ND	0.20	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Bromoform	ND	0.31	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
2-Butanone	ND	2.0	10		µg/L	1	9/17/2021 4:13:10 AM	R81355
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2021 4:13:10 AM	R81355
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Chloroethane	ND	0.38	2.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Chloromethane	ND	0.41	3.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Dibromochloromethane	ND	0.28	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Dibromomethane	ND	0.31	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-001A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
2-Hexanone	ND	1.8	10		µg/L	1	9/17/2021 4:13:10 AM	R81355
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/17/2021 4:13:10 AM	R81355
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Styrene	0.15	0.14	1.0	J	µg/L	1	9/17/2021 4:13:10 AM	R81355
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2021 4:13:10 AM	R81355
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2021 4:13:10 AM	R81355
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	9/17/2021 4:13:10 AM	R81355
Surr: 4-Bromofluorobenzene	97.8	0	70-130		%Rec	1	9/17/2021 4:13:10 AM	R81355
Surr: Dibromofluoromethane	98.8	0	70-130		%Rec	1	9/17/2021 4:13:10 AM	R81355
Surr: Toluene-d8	105	0	70-130		%Rec	1	9/17/2021 4:13:10 AM	R81355
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **mb**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/17/2021 4:13:10 AM	R81355
Surr: 4-Bromofluorobenzene	98.6	0	70-130		%Rec	1	9/17/2021 4:13:10 AM	R81355

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-001B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	9/21/2021 3:41:14 PM	62680

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-001C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.063	0.016	0.064	J	mg/L	1	9/21/2021 6:44:25 PM	62658
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/21/2021 6:44:25 PM	62658
Surr: DNOP	103	0	15-142		%Rec	1	9/21/2021 6:44:25 PM	62658

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Azobenzene	ND	0.55	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Benzoic acid	ND	1.1	20		µg/L	1	9/22/2021 6:34:17 PM	62647
Benzyl alcohol	3.8	0.68	5.0	J	µg/L	1	9/22/2021 6:34:17 PM	62647
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/22/2021 6:34:17 PM	62647
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Carbazole	ND	0.56	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
4-Chloroaniline	ND	0.53	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
2-Chlorophenol	ND	0.62	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	9/22/2021 6:34:17 PM	62647
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/22/2021 6:34:17 PM	62647
Dibenz(a,h)anthracene	ND	0.83	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Dibenzofuran	ND	0.38	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Diethyl phthalate	ND	3.9	10		µg/L	1	9/22/2021 6:34:17 PM	62647
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/22/2021 6:34:17 PM	62647
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Hexachloroethane	ND	0.45	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Isophorone	ND	0.40	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
2-Nitroaniline	ND	0.31	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
3-Nitroaniline	ND	1.6	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
4-Nitroaniline	ND	0.47	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Nitrobenzene	ND	0.51	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
2-Nitrophenol	ND	0.47	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
4-Nitrophenol	ND	0.28	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Pentachlorophenol	ND	0.59	20		µg/L	1	9/22/2021 6:34:17 PM	62647
Phenol	ND	0.33	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Pyridine	ND	0.93	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/22/2021 6:34:17 PM	62647
Surr: 2-Fluorophenol	50.7	0	15-87		%Rec	1	9/22/2021 6:34:17 PM	62647
Surr: Phenol-d5	38.5	0	15-67.5		%Rec	1	9/22/2021 6:34:17 PM	62647
Surr: 2,4,6-Tribromophenol	58.8	0	15-122		%Rec	1	9/22/2021 6:34:17 PM	62647
Surr: Nitrobenzene-d5	60.6	0	15-103		%Rec	1	9/22/2021 6:34:17 PM	62647
Surr: 2-Fluorobiphenyl	57.3	0	15-103		%Rec	1	9/22/2021 6:34:17 PM	62647
Surr: 4-Terphenyl-d14	104	0	45-137		%Rec	1	9/22/2021 6:34:17 PM	62647
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	ND	0.048	1.0		µg/L	1	9/24/2021 7:28:00 PM	62617
Naphthalene	ND	0.034	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
Acenaphthylene	ND	0.043	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
Acenaphthene	ND	0.031	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
Fluorene	ND	0.031	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
Phenanthrene	ND	0.057	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
Anthracene	ND	0.034	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
Fluoranthene	ND	0.10	0.20		µg/L	1	9/24/2021 7:28:00 PM	62617
Pyrene	ND	0.16	0.20		µg/L	1	9/24/2021 7:28:00 PM	62617
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
Chrysene	ND	0.024	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	9/24/2021 7:28:00 PM	62617
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	9/24/2021 7:28:00 PM	62617
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	9/24/2021 7:28:00 PM	62617

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-001D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	38.5	0	21.9-89.8		%Rec	1	9/24/2021 7:28:00 PM	62617
Surr: 2,4,6-Tribromophenol	33.0	0	23.4-71.6		%Rec	1	9/24/2021 7:28:00 PM	62617
Surr: 2-Fluorobiphenyl	33.0	0	15-84.5		%Rec	1	9/24/2021 7:28:00 PM	62617
Surr: 4-Terphenyl-d14	65.5	0	73.1-152	S	%Rec	1	9/24/2021 7:28:00 PM	62617

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-001E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.040	0.10		mg/L	1	9/16/2021 11:26:48 AM	R81351
Chloride	ND	0.25	0.50		mg/L	1	9/16/2021 11:26:48 AM	R81351
Nitrogen, Nitrite (As N)	ND	0.0053	0.10		mg/L	1	9/16/2021 11:26:48 AM	R81351
Nitrogen, Nitrate (As N)	0.055	0.010	0.10	J	mg/L	1	9/16/2021 11:26:48 AM	R81351
Sulfate	ND	0.25	0.50		mg/L	1	9/16/2021 11:26:48 AM	R81351

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-001F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	ND	0.0074	0.020		mg/L	1	9/23/2021 11:47:47 AM	62771
Barium	ND	0.0016	0.0030		mg/L	1	9/23/2021 11:47:47 AM	62771
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2021 11:47:47 AM	62771
Boron	ND	0.0074	0.040		mg/L	1	9/23/2021 11:47:47 AM	62771
Cadmium	ND	0.0015	0.0020		mg/L	1	9/23/2021 11:47:47 AM	62771
Calcium	ND	0.11	1.0		mg/L	1	9/23/2021 11:47:47 AM	62771
Chromium	ND	0.0021	0.0060		mg/L	1	9/23/2021 11:47:47 AM	62771
Cobalt	ND	0.0024	0.0060		mg/L	1	9/23/2021 11:47:47 AM	62771
Iron	ND	0.013	0.050		mg/L	1	9/23/2021 11:47:47 AM	62771
Magnesium	ND	0.067	1.0		mg/L	1	9/23/2021 11:47:47 AM	62771
Manganese	ND	0.00081	0.0020		mg/L	1	9/23/2021 11:47:47 AM	62771
Molybdenum	ND	0.0065	0.0080		mg/L	1	9/23/2021 11:47:47 AM	62771
Nickel	ND	0.0033	0.010		mg/L	1	9/23/2021 11:47:47 AM	62771
Potassium	ND	0.16	1.0		mg/L	1	9/23/2021 11:47:47 AM	62771
Silver	ND	0.0013	0.0050		mg/L	1	9/23/2021 11:47:47 AM	62771
Sodium	ND	0.19	1.0		mg/L	1	9/23/2021 11:47:47 AM	62771
Zinc	ND	0.0064	0.010		mg/L	1	9/23/2021 11:47:47 AM	62771
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/28/2021 3:47:32 PM	62771
Arsenic	ND	0.00013	0.0010		mg/L	1	9/28/2021 3:47:32 PM	62771
Copper	ND	0.00040	0.0010		mg/L	1	9/28/2021 3:47:32 PM	62771
Lead	ND	0.000061	0.00050		mg/L	1	9/28/2021 3:47:32 PM	62771
Selenium	ND	0.00037	0.0010		mg/L	1	9/28/2021 3:47:32 PM	62771
Thallium	ND	0.00025	0.00025		mg/L	1	9/28/2021 3:47:32 PM	62771
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:04:00 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-001G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	9/16/2021 3:27:31 PM	B81329
Barium	ND	0.0011	0.0020		mg/L	1	9/16/2021 3:27:31 PM	B81329
Beryllium	0.0016	0.00088	0.0020	J	mg/L	1	9/16/2021 3:27:31 PM	B81329
Boron	ND	0.0067	0.040		mg/L	1	9/16/2021 3:27:31 PM	B81329
Cadmium	ND	0.0012	0.0020		mg/L	1	9/16/2021 3:27:31 PM	B81329
Chromium	ND	0.0020	0.0060		mg/L	1	9/16/2021 3:27:31 PM	B81329
Cobalt	ND	0.0024	0.0060		mg/L	1	9/16/2021 3:27:31 PM	B81329
Iron	ND	0.010	0.020		mg/L	1	9/16/2021 3:27:31 PM	B81329
Manganese	ND	0.00058	0.0020		mg/L	1	9/16/2021 3:27:31 PM	B81329
Molybdenum	ND	0.0056	0.0080		mg/L	1	9/16/2021 3:27:31 PM	B81329
Nickel	ND	0.0033	0.010		mg/L	1	9/16/2021 3:27:31 PM	B81329
Silver	ND	0.0013	0.0050		mg/L	1	9/16/2021 3:27:31 PM	B81329
Zinc	0.0078	0.0060	0.010	J	mg/L	1	9/16/2021 3:27:31 PM	B81329
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/18/2021 8:29:16 PM	B81374
Arsenic	ND	0.00012	0.0010		mg/L	1	9/18/2021 8:29:16 PM	B81374
Copper	ND	0.00037	0.0010		mg/L	1	9/18/2021 8:29:16 PM	B81374
Lead	ND	0.000057	0.00050		mg/L	1	9/18/2021 8:29:16 PM	B81374
Selenium	ND	0.00034	0.0010		mg/L	1	9/18/2021 8:29:16 PM	B81374
Uranium	ND	0.000065	0.00050		mg/L	1	9/18/2021 8:29:16 PM	B81374
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:06:25 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Benzene	3700	23	100		µg/L	100	9/17/2021 4:41:50 AM	R81355
Toluene	250	2.0	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
Ethylbenzene	1100	21	100		µg/L	100	9/17/2021 4:41:50 AM	R81355
Methyl tert-butyl ether (MTBE)	5.8	3.9	10	J	µg/L	10	9/17/2021 5:10:21 AM	R81355
1,2,4-Trimethylbenzene	890	1.2	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,3,5-Trimethylbenzene	220	1.8	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,2-Dichloroethane (EDC)	ND	2.5	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
Naphthalene	180	5.0	20		µg/L	10	9/17/2021 5:10:21 AM	R81355
1-Methylnaphthalene	62	8.4	40		µg/L	10	9/17/2021 5:10:21 AM	R81355
2-Methylnaphthalene	110	6.9	40		µg/L	10	9/17/2021 5:10:21 AM	R81355
Acetone	26	25	100	J	µg/L	10	9/17/2021 5:10:21 AM	R81355
Bromobenzene	ND	2.8	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
Bromodichloromethane	ND	2.0	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
Bromoform	ND	3.1	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
Bromomethane	ND	8.5	30		µg/L	10	9/17/2021 5:10:21 AM	R81355
2-Butanone	21	20	100	J	µg/L	10	9/17/2021 5:10:21 AM	R81355
Carbon disulfide	ND	5.9	100		µg/L	10	9/17/2021 5:10:21 AM	R81355
Carbon Tetrachloride	ND	1.8	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
Chlorobenzene	ND	1.6	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
Chloroethane	ND	3.8	20		µg/L	10	9/17/2021 5:10:21 AM	R81355
Chloroform	4.6	1.3	10	J	µg/L	10	9/17/2021 5:10:21 AM	R81355
Chloromethane	ND	4.1	30		µg/L	10	9/17/2021 5:10:21 AM	R81355
2-Chlorotoluene	ND	1.3	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
4-Chlorotoluene	ND	3.4	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
cis-1,2-DCE	9.3	3.9	10	J	µg/L	10	9/17/2021 5:10:21 AM	R81355
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	9/17/2021 5:10:21 AM	R81355
Dibromochloromethane	ND	2.8	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
Dibromomethane	ND	3.1	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
Dichlorodifluoromethane	ND	4.0	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,1-Dichloroethane	24	2.7	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,1-Dichloroethene	ND	2.0	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,2-Dichloropropane	ND	2.0	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,3-Dichloropropane	ND	1.8	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
2,2-Dichloropropane	ND	2.6	20		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,1-Dichloropropene	ND	1.8	10		µg/L	10	9/17/2021 5:10:21 AM	R81355

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-002A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Hexachlorobutadiene	ND	5.6	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
2-Hexanone	ND	18	100		µg/L	10	9/17/2021 5:10:21 AM	R81355
Isopropylbenzene	71	1.8	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
4-Isopropyltoluene	7.2	2.0	10	J	µg/L	10	9/17/2021 5:10:21 AM	R81355
4-Methyl-2-pentanone	ND	8.8	100		µg/L	10	9/17/2021 5:10:21 AM	R81355
Methylene Chloride	ND	5.0	30		µg/L	10	9/17/2021 5:10:21 AM	R81355
n-Butylbenzene	12	2.5	30	J	µg/L	10	9/17/2021 5:10:21 AM	R81355
n-Propylbenzene	130	1.8	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
sec-Butylbenzene	5.9	1.4	10	J	µg/L	10	9/17/2021 5:10:21 AM	R81355
Styrene	ND	1.4	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
tert-Butylbenzene	ND	2.4	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	9/17/2021 5:10:21 AM	R81355
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
trans-1,2-DCE	2.7	1.9	10	J	µg/L	10	9/17/2021 5:10:21 AM	R81355
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,2,3-Trichlorobenzene	ND	2.5	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,1,2-Trichloroethane	ND	2.0	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
Trichlorofluoromethane	ND	1.6	10		µg/L	10	9/17/2021 5:10:21 AM	R81355
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	9/17/2021 5:10:21 AM	R81355
Vinyl chloride	8.1	3.2	10	J	µg/L	10	9/17/2021 5:10:21 AM	R81355
Xylenes, Total	4300	37	150		µg/L	100	9/17/2021 4:41:50 AM	R81355
Surr: 1,2-Dichloroethane-d4	98.9	0	70-130		%Rec	10	9/17/2021 5:10:21 AM	R81355
Surr: 4-Bromofluorobenzene	77.2	0	70-130		%Rec	10	9/17/2021 5:10:21 AM	R81355
Surr: Dibromofluoromethane	91.5	0	70-130		%Rec	10	9/17/2021 5:10:21 AM	R81355
Surr: Toluene-d8	105	0	70-130		%Rec	10	9/17/2021 5:10:21 AM	R81355
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **mb**	
Gasoline Range Organics (GRO)	48	0.12	0.50		mg/L	10	9/17/2021 5:10:21 AM	R81355
Surr: 4-Bromofluorobenzene	82.9	0	70-130		%Rec	10	9/17/2021 5:10:21 AM	R81355

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-002B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	9/21/2021 3:56:22 PM	62680

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-002C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	1.8	0.016	0.064		mg/L	1	9/21/2021 7:08:36 PM	62658
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/21/2021 7:08:36 PM	62658
Surr: DNOP	105	0	15-142		%Rec	1	9/21/2021 7:08:36 PM	62658

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Anthracene	1.7	0.75	5.0	J	µg/L	1	9/23/2021 9:48:28 AM	62647
Azobenzene	ND	0.55	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Benzoic acid	ND	1.1	20		µg/L	1	9/23/2021 9:48:28 AM	62647
Benzyl alcohol	ND	0.68	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/23/2021 9:48:28 AM	62647
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Carbazole	5.8	0.56	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
4-Chloroaniline	ND	0.53	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
2-Chlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	9/23/2021 9:48:28 AM	62647
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/23/2021 9:48:28 AM	62647
Dibenzofuran	2.2	0.38	5.0	J	µg/L	1	9/23/2021 9:48:28 AM	62647
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Diethyl phthalate	ND	3.9	10		µg/L	1	9/23/2021 9:48:28 AM	62647
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/23/2021 9:48:28 AM	62647
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
2,4-Dimethylphenol	15	0.97	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Hexachloroethane	ND	0.45	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Isophorone	ND	0.40	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
2-Methylphenol	4.8	0.51	5.0	J	µg/L	1	9/23/2021 9:48:28 AM	62647
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
2-Nitroaniline	ND	0.31	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
3-Nitroaniline	ND	1.6	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
4-Nitroaniline	ND	0.47	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Nitrobenzene	ND	0.51	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
2-Nitrophenol	ND	0.47	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
4-Nitrophenol	ND	0.28	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Pentachlorophenol	ND	0.59	20		µg/L	1	9/23/2021 9:48:28 AM	62647
Phenol	26	0.33	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Pyridine	ND	0.93	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/23/2021 9:48:28 AM	62647
Surr: 2-Fluorophenol	0	0	15-87	S	%Rec	1	9/23/2021 9:48:28 AM	62647
Surr: Phenol-d5	41.1	0	15-67.5		%Rec	1	9/23/2021 9:48:28 AM	62647
Surr: 2,4,6-Tribromophenol	65.1	0	15-122		%Rec	1	9/23/2021 9:48:28 AM	62647
Surr: Nitrobenzene-d5	62.4	0	15-103		%Rec	1	9/23/2021 9:48:28 AM	62647
Surr: 2-Fluorobiphenyl	59.3	0	15-103		%Rec	1	9/23/2021 9:48:28 AM	62647
Surr: 4-Terphenyl-d14	89.3	0	45-137		%Rec	1	9/23/2021 9:48:28 AM	62647
EPA METHOD 8270SIM							Analyst: **DAM**	
Naphthalene	110	0.34	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
1-Methylnaphthalene	42	0.24	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
2-Methylnaphthalene	68	0.34	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Acenaphthylene	ND	0.43	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Acenaphthene	1.4	0.31	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Fluorene	2.4	0.31	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Phenanthrene	1.6	0.57	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Anthracene	ND	0.34	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Fluoranthene	ND	1.0	2.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Pyrene	ND	1.6	2.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Chrysene	ND	0.24	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Benzo(b)fluoranthene	ND	0.57	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Benzo(k)fluoranthene	ND	0.36	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Benzo(a)pyrene	ND	0.34	0.70	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Dibenz(a,h)anthracene	ND	0.34	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Benzo(g,h,i)perylene	ND	0.34	1.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Indeno(1,2,3-cd)pyrene	ND	0.43	3.0	D	µg/L	10	9/24/2021 8:11:00 PM	62617
Surr: Nitrobenzene-d5	0	0	21.9-89.8	SD	%Rec	10	9/24/2021 8:11:00 PM	62617

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-002D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 2,4,6-Tribromophenol	0	0	23.4-71.6	SD	%Rec	10	9/24/2021 8:11:00 PM	62617
Surr: 2-Fluorobiphenyl	0	0	15-84.5	SD	%Rec	10	9/24/2021 8:11:00 PM	62617
Surr: 4-Terphenyl-d14	0	0	73.1-152	SD	%Rec	10	9/24/2021 8:11:00 PM	62617

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-002E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.63	0.20	0.50		mg/L	5	9/16/2021 12:31:07 PM	R81351
Chloride	970	25	50	*	mg/L	100	9/21/2021 9:23:30 PM	A81455
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	9/16/2021 12:31:07 PM	R81351
Nitrogen, Nitrate (As N)	ND	0.050	0.50		mg/L	5	9/16/2021 12:31:07 PM	R81351
Sulfate	ND	1.2	2.5		mg/L	5	9/16/2021 12:31:07 PM	R81351

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-002F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	8.5	0.074	0.20	*	mg/L	10	9/23/2021 11:57:10 AM	62771
Barium	9.2	0.016	0.030	*	mg/L	10	9/23/2021 11:57:10 AM	62771
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2021 11:55:47 AM	62771
Boron	0.58	0.0074	0.040		mg/L	1	9/23/2021 11:55:47 AM	62771
Cadmium	ND	0.0015	0.0020		mg/L	1	9/23/2021 11:55:47 AM	62771
Calcium	280	1.1	10		mg/L	10	9/23/2021 11:57:10 AM	62771
Chromium	ND	0.0021	0.0060		mg/L	1	9/23/2021 11:55:47 AM	62771
Cobalt	0.0034	0.0024	0.0060	J	mg/L	1	9/23/2021 11:55:47 AM	62771
Iron	12	0.26	1.0	*	mg/L	20	9/23/2021 12:34:48 PM	62771
Magnesium	73	0.067	1.0		mg/L	1	9/23/2021 11:55:47 AM	62771
Manganese	5.2	0.0081	0.020	*	mg/L	10	9/23/2021 11:57:10 AM	62771
Molybdenum	ND	0.0065	0.0080		mg/L	1	9/23/2021 11:55:47 AM	62771
Potassium	1.9	0.16	1.0		mg/L	1	9/23/2021 11:55:47 AM	62771
Silver	ND	0.0013	0.0050		mg/L	1	9/23/2021 11:55:47 AM	62771
Sodium	440	1.9	10		mg/L	10	9/23/2021 11:57:10 AM	62771
Zinc	0.0092	0.0064	0.010	J	mg/L	1	9/23/2021 11:55:47 AM	62771
EPA 200.8: METALS							Analyst: **bcv**	
Arsenic	0.010	0.00013	0.0010	*	mg/L	1	9/28/2021 3:49:57 PM	62771
Copper	0.0043	0.00040	0.0010		mg/L	1	9/28/2021 3:49:57 PM	62771
Lead	0.0032	0.000061	0.00050		mg/L	1	9/28/2021 3:49:57 PM	62771
Selenium	0.0015	0.00037	0.0010		mg/L	1	9/28/2021 3:49:57 PM	62771
Thallium	ND	0.00025	0.00025		mg/L	1	9/28/2021 3:49:57 PM	62771
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:13:29 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-10
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 8:30:00 AM
Lab ID: 2109786-002G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	9/16/2021 3:29:14 PM	B81329
Barium	9.0	0.011	0.020	*	mg/L	10	9/17/2021 9:43:57 AM	A81359
Beryllium	ND	0.00088	0.0020		mg/L	1	9/16/2021 3:29:14 PM	B81329
Boron	0.55	0.0067	0.040		mg/L	1	9/16/2021 3:29:14 PM	B81329
Cadmium	ND	0.0012	0.0020		mg/L	1	9/16/2021 3:29:14 PM	B81329
Chromium	ND	0.0020	0.0060		mg/L	1	9/16/2021 3:29:14 PM	B81329
Cobalt	0.0032	0.0024	0.0060	J	mg/L	1	9/16/2021 3:29:14 PM	B81329
Iron	8.0	0.10	0.20	*	mg/L	10	9/17/2021 9:43:57 AM	A81359
Manganese	5.0	0.0058	0.020	*	mg/L	10	9/17/2021 9:43:57 AM	A81359
Molybdenum	ND	0.0056	0.0080		mg/L	1	9/16/2021 3:29:14 PM	B81329
Nickel	0.017	0.0033	0.010		mg/L	1	9/16/2021 3:29:14 PM	B81329
Silver	ND	0.0013	0.0050		mg/L	1	9/16/2021 3:29:14 PM	B81329
Zinc	0.0090	0.0060	0.010	J	mg/L	1	9/16/2021 3:29:14 PM	B81329
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/18/2021 8:43:31 PM	B81374
Arsenic	0.0089	0.00012	0.0010		mg/L	1	9/18/2021 8:43:31 PM	B81374
Copper	ND	0.00037	0.0010		mg/L	1	9/18/2021 8:43:31 PM	B81374
Lead	ND	0.000057	0.00050		mg/L	1	9/18/2021 8:43:31 PM	B81374
Selenium	ND	0.00034	0.0010		mg/L	1	9/18/2021 8:43:31 PM	B81374
Thallium	ND	0.00025	0.00025		mg/L	1	9/18/2021 8:43:31 PM	B81374
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:15:52 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:00:00 AM
Lab ID: 2109786-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Benzene	7800	23	100		µg/L	100	9/17/2021 6:07:39 AM	R81355
Toluene	400	2.0	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
Ethylbenzene	480	2.1	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
Methyl tert-butyl ether (MTBE)	41	3.9	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,2,4-Trimethylbenzene	250	1.2	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,3,5-Trimethylbenzene	58	1.8	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,2-Dichloroethane (EDC)	3.0	2.5	10	J	µg/L	10	9/17/2021 6:36:20 AM	R81355
1,2-Dibromoethane (EDB)	ND	3.0	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
Naphthalene	46	5.0	20		µg/L	10	9/17/2021 6:36:20 AM	R81355
1-Methylnaphthalene	12	8.4	40	J	µg/L	10	9/17/2021 6:36:20 AM	R81355
2-Methylnaphthalene	16	6.9	40	J	µg/L	10	9/17/2021 6:36:20 AM	R81355
Acetone	27	25	100	J	µg/L	10	9/17/2021 6:36:20 AM	R81355
Bromobenzene	ND	2.8	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
Bromodichloromethane	ND	2.0	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
Bromoform	ND	3.1	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
Bromomethane	ND	8.5	30		µg/L	10	9/17/2021 6:36:20 AM	R81355
2-Butanone	24	20	100	J	µg/L	10	9/17/2021 6:36:20 AM	R81355
Carbon disulfide	ND	5.9	100		µg/L	10	9/17/2021 6:36:20 AM	R81355
Carbon Tetrachloride	ND	1.8	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
Chlorobenzene	ND	1.6	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
Chloroethane	ND	3.8	20		µg/L	10	9/17/2021 6:36:20 AM	R81355
Chloroform	2.6	1.3	10	J	µg/L	10	9/17/2021 6:36:20 AM	R81355
Chloromethane	ND	4.1	30		µg/L	10	9/17/2021 6:36:20 AM	R81355
2-Chlorotoluene	ND	1.3	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
4-Chlorotoluene	ND	3.4	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
cis-1,2-DCE	ND	3.9	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
cis-1,3-Dichloropropene	ND	3.6	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,2-Dibromo-3-chloropropane	ND	5.9	20		µg/L	10	9/17/2021 6:36:20 AM	R81355
Dibromochloromethane	ND	2.8	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
Dibromomethane	ND	3.1	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,2-Dichlorobenzene	ND	1.5	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,3-Dichlorobenzene	ND	1.6	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,4-Dichlorobenzene	ND	2.1	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
Dichlorodifluoromethane	ND	4.0	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,1-Dichloroethane	11	2.7	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,1-Dichloroethene	ND	2.0	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,2-Dichloropropane	ND	2.0	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,3-Dichloropropane	ND	1.8	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
2,2-Dichloropropane	ND	2.6	20		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,1-Dichloropropene	ND	1.8	10		µg/L	10	9/17/2021 6:36:20 AM	R81355

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:00:00 AM
Lab ID: 2109786-003A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Hexachlorobutadiene	ND	5.6	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
2-Hexanone	ND	18	100		µg/L	10	9/17/2021 6:36:20 AM	R81355
Isopropylbenzene	16	1.8	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
4-Isopropyltoluene	ND	2.0	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
4-Methyl-2-pentanone	ND	8.8	100		µg/L	10	9/17/2021 6:36:20 AM	R81355
Methylene Chloride	ND	5.0	30		µg/L	10	9/17/2021 6:36:20 AM	R81355
n-Butylbenzene	4.0	2.5	30	J	µg/L	10	9/17/2021 6:36:20 AM	R81355
n-Propylbenzene	32	1.8	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
sec-Butylbenzene	4.2	1.4	10	J	µg/L	10	9/17/2021 6:36:20 AM	R81355
Styrene	ND	1.4	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
tert-Butylbenzene	ND	2.4	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,1,1,2-Tetrachloroethane	ND	2.7	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,1,2,2-Tetrachloroethane	ND	2.7	20		µg/L	10	9/17/2021 6:36:20 AM	R81355
Tetrachloroethene (PCE)	ND	3.6	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
trans-1,2-DCE	ND	1.9	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
trans-1,3-Dichloropropene	ND	3.4	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,2,3-Trichlorobenzene	ND	2.5	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,2,4-Trichlorobenzene	ND	2.4	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,1,1-Trichloroethane	ND	3.0	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,1,2-Trichloroethane	ND	2.0	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
Trichloroethene (TCE)	ND	2.0	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
Trichlorofluoromethane	ND	1.6	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
1,2,3-Trichloropropane	ND	4.4	20		µg/L	10	9/17/2021 6:36:20 AM	R81355
Vinyl chloride	16	3.2	10		µg/L	10	9/17/2021 6:36:20 AM	R81355
Xylenes, Total	1700	3.7	15		µg/L	10	9/17/2021 6:36:20 AM	R81355
Surr: 1,2-Dichloroethane-d4	95.2	0	70-130		%Rec	10	9/17/2021 6:36:20 AM	R81355
Surr: 4-Bromofluorobenzene	88.2	0	70-130		%Rec	10	9/17/2021 6:36:20 AM	R81355
Surr: Dibromofluoromethane	93.9	0	70-130		%Rec	10	9/17/2021 6:36:20 AM	R81355
Surr: Toluene-d8	103	0	70-130		%Rec	10	9/17/2021 6:36:20 AM	R81355
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **mb**	
Gasoline Range Organics (GRO)	25	0.12	0.50		mg/L	10	9/17/2021 6:36:20 AM	R81355
Surr: 4-Bromofluorobenzene	94.4	0	70-130		%Rec	10	9/17/2021 6:36:20 AM	R81355

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:00:00 AM
Lab ID: 2109786-003B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	9/21/2021 4:11:22 PM	62680

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:00:00 AM
Lab ID: 2109786-003C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.88	0.016	0.064		mg/L	1	9/21/2021 7:32:52 PM	62658
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/21/2021 7:32:52 PM	62658
Surr: DNOP	103	0	15-142		%Rec	1	9/21/2021 7:32:52 PM	62658

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:00:00 AM
Lab ID: 2109786-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Azobenzene	ND	0.55	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Benzoic acid	ND	1.1	20		µg/L	1	9/23/2021 10:29:33 AM	62647
Benzyl alcohol	ND	0.68	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/23/2021 10:29:33 AM	62647
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Carbazole	4.2	0.56	5.0	J	µg/L	1	9/23/2021 10:29:33 AM	62647
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
4-Chloroaniline	ND	0.53	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
2-Chlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	9/23/2021 10:29:33 AM	62647
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/23/2021 10:29:33 AM	62647
Dibenzofuran	1.7	0.38	5.0	J	µg/L	1	9/23/2021 10:29:33 AM	62647
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Diethyl phthalate	ND	3.9	10		µg/L	1	9/23/2021 10:29:33 AM	62647
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/23/2021 10:29:33 AM	62647
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
2,4-Dimethylphenol	15	0.97	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Hexachloroethane	ND	0.45	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Isophorone	ND	0.40	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
2-Methylphenol	12	0.51	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
3+4-Methylphenol	6.1	0.45	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:00:00 AM
Lab ID: 2109786-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
2-Nitroaniline	ND	0.31	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
3-Nitroaniline	ND	1.6	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
4-Nitroaniline	ND	0.47	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Nitrobenzene	ND	0.51	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
2-Nitrophenol	ND	0.47	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
4-Nitrophenol	ND	0.28	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Pentachlorophenol	ND	0.59	20		µg/L	1	9/23/2021 10:29:33 AM	62647
Phenol	70	0.33	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Pyridine	ND	0.93	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/23/2021 10:29:33 AM	62647
Surr: 2-Fluorophenol	0	0	15-87	S	%Rec	1	9/23/2021 10:29:33 AM	62647
Surr: Phenol-d5	39.7	0	15-67.5		%Rec	1	9/23/2021 10:29:33 AM	62647
Surr: 2,4,6-Tribromophenol	64.8	0	15-122		%Rec	1	9/23/2021 10:29:33 AM	62647
Surr: Nitrobenzene-d5	61.1	0	15-103		%Rec	1	9/23/2021 10:29:33 AM	62647
Surr: 2-Fluorobiphenyl	54.4	0	15-103		%Rec	1	9/23/2021 10:29:33 AM	62647
Surr: 4-Terphenyl-d14	91.5	0	45-137		%Rec	1	9/23/2021 10:29:33 AM	62647
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	5.0	0.48	10	JD	µg/L	10	9/24/2021 8:55:00 PM	62617
Naphthalene	21	0.34	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
1-Methylnaphthalene	6.2	0.24	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
2-Methylnaphthalene	8.0	0.34	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Acenaphthylene	ND	0.43	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Acenaphthene	ND	0.31	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Fluorene	ND	0.31	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Phenanthrene	ND	0.57	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Anthracene	ND	0.34	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Fluoranthene	ND	1.0	2.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Pyrene	ND	1.6	2.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Benz(a)anthracene	ND	0.36	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Chrysene	ND	0.24	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Benzo(b)fluoranthene	ND	0.57	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Benzo(k)fluoranthene	ND	0.36	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Benzo(a)pyrene	ND	0.34	0.70	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Dibenz(a,h)anthracene	ND	0.34	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Benzo(g,h,i)perylene	ND	0.34	1.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Indeno(1,2,3-cd)pyrene	ND	0.43	3.0	D	µg/L	10	9/24/2021 8:55:00 PM	62617
Surr: Nitrobenzene-d5	0	0	21.9-89.8	SD	%Rec	10	9/24/2021 8:55:00 PM	62617

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:00:00 AM
Lab ID: 2109786-003D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 2,4,6-Tribromophenol	0	0	23.4-71.6	SD	%Rec	10	9/24/2021 8:55:00 PM	62617
Surr: 2-Fluorobiphenyl	0	0	15-84.5	SD	%Rec	10	9/24/2021 8:55:00 PM	62617
Surr: 4-Terphenyl-d14	0	0	73.1-152	SD	%Rec	10	9/24/2021 8:55:00 PM	62617

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:00:00 AM
Lab ID: 2109786-003E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.25	0.20	0.50	J	mg/L	5	9/16/2021 1:22:37 PM	R81351
Chloride	1600	50	100	*	mg/L	200	9/21/2021 9:35:55 PM	A81455
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	9/16/2021 1:22:37 PM	R81351
Nitrogen, Nitrate (As N)	ND	0.050	0.50		mg/L	5	9/16/2021 1:22:37 PM	R81351
Sulfate	7.0	1.2	2.5		mg/L	5	9/16/2021 1:22:37 PM	R81351

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:00:00 AM
Lab ID: 2109786-003F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.20	0.0074	0.020		mg/L	1	9/23/2021 11:58:33 AM	62771
Barium	4.9	0.016	0.030	*	mg/L	10	9/23/2021 11:59:54 AM	62771
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2021 11:58:33 AM	62771
Boron	0.67	0.0074	0.040		mg/L	1	9/23/2021 11:58:33 AM	62771
Cadmium	ND	0.0015	0.0020		mg/L	1	9/23/2021 11:58:33 AM	62771
Calcium	250	1.1	10		mg/L	10	9/23/2021 11:59:54 AM	62771
Chromium	ND	0.0021	0.0060		mg/L	1	9/23/2021 11:58:33 AM	62771
Cobalt	0.0066	0.0024	0.0060		mg/L	1	9/23/2021 11:58:33 AM	62771
Iron	5.3	0.13	0.50	*	mg/L	10	9/23/2021 11:59:54 AM	62771
Manganese	4.5	0.0081	0.020	*	mg/L	10	9/23/2021 11:59:54 AM	62771
Molybdenum	0.013	0.0065	0.0080		mg/L	1	9/23/2021 11:58:33 AM	62771
Nickel	0.028	0.0033	0.010		mg/L	1	9/23/2021 11:58:33 AM	62771
Potassium	1.7	0.16	1.0		mg/L	1	9/23/2021 11:58:33 AM	62771
Silver	ND	0.0013	0.0050		mg/L	1	9/23/2021 11:58:33 AM	62771
Sodium	900	1.9	10		mg/L	10	9/23/2021 11:59:54 AM	62771
Zinc	ND	0.0064	0.010		mg/L	1	9/23/2021 11:58:33 AM	62771
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/28/2021 3:52:23 PM	62771
Arsenic	0.011	0.00013	0.0010	*	mg/L	1	9/28/2021 3:52:23 PM	62771
Copper	ND	0.00040	0.0010		mg/L	1	9/28/2021 3:52:23 PM	62771
Lead	0.00019	0.000061	0.00050	J	mg/L	1	9/28/2021 3:52:23 PM	62771
Selenium	0.00071	0.00037	0.0010	J	mg/L	1	9/28/2021 3:52:23 PM	62771
Thallium	ND	0.00025	0.00025		mg/L	1	9/28/2021 3:52:23 PM	62771
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	0.00026	0.00012	0.00020		mg/L	1	9/20/2021 5:18:14 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-11
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:00:00 AM
Lab ID: 2109786-003G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	9/16/2021 3:30:43 PM	B81329
Barium	5.1	0.011	0.020	*	mg/L	10	9/17/2021 9:45:26 AM	A81359
Beryllium	ND	0.00088	0.0020		mg/L	1	9/16/2021 3:30:43 PM	B81329
Boron	0.63	0.0067	0.040		mg/L	1	9/16/2021 3:30:43 PM	B81329
Cadmium	ND	0.0012	0.0020		mg/L	1	9/16/2021 3:30:43 PM	B81329
Chromium	ND	0.0020	0.0060		mg/L	1	9/16/2021 3:30:43 PM	B81329
Cobalt	0.0052	0.0024	0.0060	J	mg/L	1	9/16/2021 3:30:43 PM	B81329
Iron	3.9	0.10	0.20	*	mg/L	10	9/17/2021 9:45:26 AM	A81359
Manganese	4.5	0.0058	0.020	*	mg/L	10	9/17/2021 9:45:26 AM	A81359
Molybdenum	0.015	0.0056	0.0080		mg/L	1	9/16/2021 3:30:43 PM	B81329
Nickel	0.024	0.0033	0.010		mg/L	1	9/16/2021 3:30:43 PM	B81329
Silver	ND	0.0013	0.0050		mg/L	1	9/16/2021 3:30:43 PM	B81329
Zinc	0.0070	0.0060	0.010	J	mg/L	1	9/16/2021 3:30:43 PM	B81329
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.0010	0.00044	0.0010		mg/L	1	9/18/2021 8:48:15 PM	B81374
Arsenic	0.0088	0.00012	0.0010		mg/L	1	9/18/2021 8:48:15 PM	B81374
Copper	ND	0.00037	0.0010		mg/L	1	9/18/2021 8:48:15 PM	B81374
Lead	ND	0.000057	0.00050		mg/L	1	9/18/2021 8:48:15 PM	B81374
Selenium	ND	0.00034	0.0010		mg/L	1	9/18/2021 8:48:15 PM	B81374
Thallium	ND	0.00025	0.00025		mg/L	1	9/18/2021 8:48:15 PM	B81374
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:20:37 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:15:00 AM
Lab ID: 2109786-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Toluene	ND	0.20	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Methyl tert-butyl ether (MTBE)	5.2	0.39	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Naphthalene	ND	0.50	2.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Acetone	9.8	2.5	10	J	µg/L	1	9/17/2021 7:33:43 AM	R81355
Bromobenzene	ND	0.28	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Bromodichloromethane	ND	0.20	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Bromoform	ND	0.31	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
2-Butanone	ND	2.0	10		µg/L	1	9/17/2021 7:33:43 AM	R81355
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2021 7:33:43 AM	R81355
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Chloroethane	ND	0.38	2.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Chloromethane	0.42	0.41	3.0	J	µg/L	1	9/17/2021 7:33:43 AM	R81355
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Dibromochloromethane	ND	0.28	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Dibromomethane	ND	0.31	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:15:00 AM
Lab ID: 2109786-004A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
2-Hexanone	ND	1.8	10		µg/L	1	9/17/2021 7:33:43 AM	R81355
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/17/2021 7:33:43 AM	R81355
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Styrene	ND	0.14	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2021 7:33:43 AM	R81355
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2021 7:33:43 AM	R81355
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	9/17/2021 7:33:43 AM	R81355
Surr: 4-Bromofluorobenzene	97.9	0	70-130		%Rec	1	9/17/2021 7:33:43 AM	R81355
Surr: Dibromofluoromethane	98.2	0	70-130		%Rec	1	9/17/2021 7:33:43 AM	R81355
Surr: Toluene-d8	103	0	70-130		%Rec	1	9/17/2021 7:33:43 AM	R81355
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **mb**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/17/2021 7:33:43 AM	R81355
Surr: 4-Bromofluorobenzene	98.9	0	70-130		%Rec	1	9/17/2021 7:33:43 AM	R81355

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:15:00 AM
Lab ID: 2109786-004B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	9/21/2021 4:26:27 PM	62680

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:15:00 AM
Lab ID: 2109786-004C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.15	0.016	0.064		mg/L	1	9/21/2021 7:57:09 PM	62658
Motor Oil Range Organics (MRO)	0.093	0.052	0.080		mg/L	1	9/21/2021 7:57:09 PM	62658
Surr: DNOP	97.5	0	15-142		%Rec	1	9/21/2021 7:57:09 PM	62658

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:15:00 AM
Lab ID: 2109786-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Azobenzene	ND	0.55	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Benzoic acid	ND	1.1	20		µg/L	1	9/23/2021 11:10:36 AM	62647
Benzyl alcohol	ND	0.68	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/23/2021 11:10:36 AM	62647
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Carbazole	ND	0.56	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
4-Chloroaniline	ND	0.53	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
2-Chlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	9/23/2021 11:10:36 AM	62647
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/23/2021 11:10:36 AM	62647
Dibenzofuran	ND	0.38	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Diethyl phthalate	ND	3.9	10		µg/L	1	9/23/2021 11:10:36 AM	62647
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/23/2021 11:10:36 AM	62647
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Hexachloroethane	ND	0.45	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Isophorone	ND	0.40	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:15:00 AM
Lab ID: 2109786-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
2-Nitroaniline	ND	0.31	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
3-Nitroaniline	ND	1.6	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
4-Nitroaniline	ND	0.47	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Nitrobenzene	ND	0.51	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
2-Nitrophenol	ND	0.47	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
4-Nitrophenol	ND	0.28	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Pentachlorophenol	ND	0.59	20		µg/L	1	9/23/2021 11:10:36 AM	62647
Phenol	ND	0.33	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Pyridine	ND	0.93	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/23/2021 11:10:36 AM	62647
Surr: 2-Fluorophenol	52.2	0	15-87		%Rec	1	9/23/2021 11:10:36 AM	62647
Surr: Phenol-d5	40.1	0	15-67.5		%Rec	1	9/23/2021 11:10:36 AM	62647
Surr: 2,4,6-Tribromophenol	65.5	0	15-122		%Rec	1	9/23/2021 11:10:36 AM	62647
Surr: Nitrobenzene-d5	63.0	0	15-103		%Rec	1	9/23/2021 11:10:36 AM	62647
Surr: 2-Fluorobiphenyl	60.9	0	15-103		%Rec	1	9/23/2021 11:10:36 AM	62647
Surr: 4-Terphenyl-d14	94.4	0	45-137		%Rec	1	9/23/2021 11:10:36 AM	62647
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	2.8	0.048	1.0		µg/L	1	9/24/2021 10:35:00 PM	62617
Naphthalene	ND	0.034	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
Acenaphthylene	ND	0.043	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
Acenaphthene	ND	0.031	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
Fluorene	ND	0.031	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
Phenanthrene	ND	0.057	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
Anthracene	ND	0.034	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
Fluoranthene	ND	0.10	0.20		µg/L	1	9/24/2021 10:35:00 PM	62617
Pyrene	0.16	0.16	0.20	J	µg/L	1	9/24/2021 10:35:00 PM	62617
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
Chrysene	ND	0.024	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	9/24/2021 10:35:00 PM	62617
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	9/24/2021 10:35:00 PM	62617
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	9/24/2021 10:35:00 PM	62617
Surr: Nitrobenzene-d5	33.5	0	21.9-89.8		%Rec	1	9/24/2021 10:35:00 PM	62617

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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:15:00 AM
Lab ID: 2109786-004D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 2,4,6-Tribromophenol	34.0	0	23.4-71.6		%Rec	1	9/24/2021 10:35:00 PM	62617
Surr: 2-Fluorobiphenyl	27.0	0	15-84.5		%Rec	1	9/24/2021 10:35:00 PM	62617
Surr: 4-Terphenyl-d14	87.5	0	73.1-152		%Rec	1	9/24/2021 10:35:00 PM	62617

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:15:00 AM
Lab ID: 2109786-004E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	1.7	0.20	0.50		mg/L	5	9/16/2021 1:48:21 PM	R81351
Chloride	2400	50	100	*	mg/L	200	9/21/2021 9:48:19 PM	A81455
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	9/16/2021 1:48:21 PM	R81351
Nitrogen, Nitrate (As N)	0.31	0.050	0.50	J	mg/L	5	9/16/2021 1:48:21 PM	R81351
Sulfate	150	1.2	2.5		mg/L	5	9/16/2021 1:48:21 PM	R81351

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Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:15:00 AM
Lab ID: 2109786-004F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.86	0.0074	0.020	*	mg/L	1	9/23/2021 12:01:16 PM	62771
Barium	0.068	0.0016	0.0030		mg/L	1	9/23/2021 12:01:16 PM	62771
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2021 12:01:16 PM	62771
Boron	0.60	0.0074	0.040		mg/L	1	9/23/2021 12:01:16 PM	62771
Cadmium	ND	0.0015	0.0020		mg/L	1	9/23/2021 12:01:16 PM	62771
Calcium	150	1.1	10		mg/L	10	9/23/2021 12:02:52 PM	62771
Chromium	ND	0.0021	0.0060		mg/L	1	9/23/2021 12:01:16 PM	62771
Cobalt	0.0028	0.0024	0.0060	J	mg/L	1	9/23/2021 12:01:16 PM	62771
Iron	0.41	0.013	0.050	*	mg/L	1	9/23/2021 12:01:16 PM	62771
Magnesium	28	0.067	1.0		mg/L	1	9/23/2021 12:01:16 PM	62771
Manganese	0.10	0.00081	0.0020	*	mg/L	1	9/23/2021 12:01:16 PM	62771
Molybdenum	ND	0.0065	0.0080		mg/L	1	9/23/2021 12:01:16 PM	62771
Nickel	0.030	0.0033	0.010		mg/L	1	9/23/2021 12:01:16 PM	62771
Potassium	11	0.16	1.0		mg/L	1	9/23/2021 12:01:16 PM	62771
Silver	ND	0.0013	0.0050		mg/L	1	9/23/2021 12:01:16 PM	62771
Sodium	1600	3.7	20		mg/L	20	9/23/2021 12:36:14 PM	62771
Zinc	ND	0.0064	0.010		mg/L	1	9/23/2021 12:01:16 PM	62771
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/28/2021 3:54:48 PM	62771
Arsenic	0.00072	0.00013	0.0010	J	mg/L	1	9/28/2021 3:54:48 PM	62771
Copper	0.0030	0.00040	0.0010		mg/L	1	9/28/2021 3:54:48 PM	62771
Lead	0.00044	0.000061	0.00050	J	mg/L	1	9/28/2021 3:54:48 PM	62771
Selenium	0.0014	0.00037	0.0010		mg/L	1	9/28/2021 3:54:48 PM	62771
Thallium	ND	0.00025	0.00025		mg/L	1	9/28/2021 3:54:48 PM	62771
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:23:00 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-27
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 9:15:00 AM
Lab ID: 2109786-004G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	9/16/2021 3:32:10 PM	B81329
Barium	0.067	0.0011	0.0020		mg/L	1	9/16/2021 3:32:10 PM	B81329
Beryllium	ND	0.00088	0.0020		mg/L	1	9/16/2021 3:32:10 PM	B81329
Boron	0.59	0.0067	0.040		mg/L	1	9/16/2021 3:32:10 PM	B81329
Cadmium	ND	0.0012	0.0020		mg/L	1	9/16/2021 3:32:10 PM	B81329
Chromium	ND	0.0020	0.0060		mg/L	1	9/16/2021 3:32:10 PM	B81329
Cobalt	0.0030	0.0024	0.0060	J	mg/L	1	9/16/2021 3:32:10 PM	B81329
Iron	ND	0.010	0.020		mg/L	1	9/16/2021 3:32:10 PM	B81329
Manganese	0.018	0.00058	0.0020		mg/L	1	9/16/2021 3:32:10 PM	B81329
Molybdenum	0.0060	0.0056	0.0080	J	mg/L	1	9/16/2021 3:32:10 PM	B81329
Nickel	0.027	0.0033	0.010		mg/L	1	9/16/2021 3:32:10 PM	B81329
Silver	ND	0.0013	0.0050		mg/L	1	9/16/2021 3:32:10 PM	B81329
Zinc	0.014	0.0060	0.010		mg/L	1	9/16/2021 3:32:10 PM	B81329
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/18/2021 8:53:00 PM	B81374
Arsenic	0.00052	0.00012	0.0010	J	mg/L	1	9/18/2021 8:53:00 PM	B81374
Copper	0.0027	0.00037	0.0010		mg/L	1	9/19/2021 5:48:53 PM	C81396
Lead	ND	0.000057	0.00050		mg/L	1	9/18/2021 8:53:00 PM	B81374
Selenium	0.00056	0.00034	0.0010	J	mg/L	1	9/18/2021 8:53:00 PM	B81374
Thallium	ND	0.00025	0.00025		mg/L	1	9/18/2021 8:53:00 PM	B81374
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:25:24 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:00:00 AM
Lab ID: 2109786-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Toluene	ND	0.20	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Naphthalene	ND	0.50	2.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Acetone	ND	2.5	10		µg/L	1	9/17/2021 8:02:18 AM	R81355
Bromobenzene	ND	0.28	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Bromodichloromethane	ND	0.20	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Bromoform	ND	0.31	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
2-Butanone	2.3	2.0	10	J	µg/L	1	9/17/2021 8:02:18 AM	R81355
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2021 8:02:18 AM	R81355
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Chloroethane	ND	0.38	2.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Chloromethane	0.49	0.41	3.0	J	µg/L	1	9/17/2021 8:02:18 AM	R81355
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Dibromochloromethane	ND	0.28	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Dibromomethane	ND	0.31	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:00:00 AM
Lab ID: 2109786-005A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
2-Hexanone	ND	1.8	10		µg/L	1	9/17/2021 8:02:18 AM	R81355
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/17/2021 8:02:18 AM	R81355
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Styrene	ND	0.14	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2021 8:02:18 AM	R81355
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2021 8:02:18 AM	R81355
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	9/17/2021 8:02:18 AM	R81355
Surr: 4-Bromofluorobenzene	98.1	0	70-130		%Rec	1	9/17/2021 8:02:18 AM	R81355
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	9/17/2021 8:02:18 AM	R81355
Surr: Toluene-d8	102	0	70-130		%Rec	1	9/17/2021 8:02:18 AM	R81355
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **mb**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/17/2021 8:02:18 AM	R81355
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	9/17/2021 8:02:18 AM	R81355

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:00:00 AM
Lab ID: 2109786-005B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	9/21/2021 4:41:32 PM	62680

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:00:00 AM
Lab ID: 2109786-005C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.15	0.016	0.064		mg/L	1	9/21/2021 8:21:30 PM	62658
Motor Oil Range Organics (MRO)	0.078	0.052	0.080	J	mg/L	1	9/21/2021 8:21:30 PM	62658
Surr: DNOP	92.8	0	15-142		%Rec	1	9/21/2021 8:21:30 PM	62658

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:00:00 AM
Lab ID: 2109786-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Azobenzene	ND	0.55	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Benzoic acid	ND	1.1	20		µg/L	1	9/23/2021 11:51:57 AM	62647
Benzyl alcohol	ND	0.68	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/23/2021 11:51:57 AM	62647
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Carbazole	ND	0.56	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
4-Chloroaniline	ND	0.53	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
2-Chlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	9/23/2021 11:51:57 AM	62647
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/23/2021 11:51:57 AM	62647
Dibenzofuran	ND	0.38	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Diethyl phthalate	ND	3.9	10		µg/L	1	9/23/2021 11:51:57 AM	62647
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/23/2021 11:51:57 AM	62647
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Hexachloroethane	ND	0.45	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Isophorone	ND	0.40	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:00:00 AM
Lab ID: 2109786-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
2-Nitroaniline	ND	0.31	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
3-Nitroaniline	ND	1.6	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
4-Nitroaniline	ND	0.47	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Nitrobenzene	ND	0.51	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
2-Nitrophenol	ND	0.47	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
4-Nitrophenol	ND	0.28	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Pentachlorophenol	ND	0.59	20		µg/L	1	9/23/2021 11:51:57 AM	62647
Phenol	ND	0.33	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Pyridine	ND	0.93	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/23/2021 11:51:57 AM	62647
Surr: 2-Fluorophenol	43.1	0	15-87		%Rec	1	9/23/2021 11:51:57 AM	62647
Surr: Phenol-d5	33.0	0	15-67.5		%Rec	1	9/23/2021 11:51:57 AM	62647
Surr: 2,4,6-Tribromophenol	63.8	0	15-122		%Rec	1	9/23/2021 11:51:57 AM	62647
Surr: Nitrobenzene-d5	49.2	0	15-103		%Rec	1	9/23/2021 11:51:57 AM	62647
Surr: 2-Fluorobiphenyl	51.7	0	15-103		%Rec	1	9/23/2021 11:51:57 AM	62647
Surr: 4-Terphenyl-d14	90.6	0	45-137		%Rec	1	9/23/2021 11:51:57 AM	62647
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	0.22	0.048	1.0	J	µg/L	1	9/24/2021 11:19:00 PM	62617
Naphthalene	ND	0.034	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
Acenaphthylene	ND	0.043	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
Acenaphthene	ND	0.031	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
Fluorene	ND	0.031	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
Phenanthrene	ND	0.057	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
Anthracene	ND	0.034	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
Fluoranthene	ND	0.10	0.20		µg/L	1	9/24/2021 11:19:00 PM	62617
Pyrene	ND	0.16	0.20		µg/L	1	9/24/2021 11:19:00 PM	62617
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
Chrysene	ND	0.024	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	9/24/2021 11:19:00 PM	62617
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	9/24/2021 11:19:00 PM	62617
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	9/24/2021 11:19:00 PM	62617
Surr: Nitrobenzene-d5	37.5	0	21.9-89.8		%Rec	1	9/24/2021 11:19:00 PM	62617

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:00:00 AM
Lab ID: 2109786-005D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 2,4,6-Tribromophenol	37.2	0	23.4-71.6		%Rec	1	9/24/2021 11:19:00 PM	62617
Surr: 2-Fluorobiphenyl	33.0	0	15-84.5		%Rec	1	9/24/2021 11:19:00 PM	62617
Surr: 4-Terphenyl-d14	82.5	0	73.1-152		%Rec	1	9/24/2021 11:19:00 PM	62617

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:00:00 AM
Lab ID: 2109786-005E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.83	0.20	0.50		mg/L	5	9/16/2021 2:14:06 PM	R81351
Chloride	870	12	25	*	mg/L	50	9/21/2021 10:00:43 PM	A81455
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	9/16/2021 2:14:06 PM	R81351
Nitrogen, Nitrate (As N)	0.41	0.050	0.50	J	mg/L	5	9/16/2021 2:14:06 PM	R81351
Sulfate	190	1.2	2.5		mg/L	5	9/16/2021 2:14:06 PM	R81351

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:00:00 AM
Lab ID: 2109786-005F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	1.6	0.074	0.20	*	mg/L	10	9/23/2021 12:05:51 PM	62771
Barium	0.12	0.0016	0.0030		mg/L	1	9/23/2021 12:04:27 PM	62771
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2021 12:04:27 PM	62771
Boron	2.0	0.074	0.40		mg/L	10	9/23/2021 12:05:51 PM	62771
Cadmium	ND	0.0015	0.0020		mg/L	1	9/23/2021 12:04:27 PM	62771
Calcium	82	0.11	1.0		mg/L	1	9/23/2021 12:04:27 PM	62771
Chromium	ND	0.0021	0.0060		mg/L	1	9/23/2021 12:04:27 PM	62771
Cobalt	0.0042	0.0024	0.0060	J	mg/L	1	9/23/2021 12:04:27 PM	62771
Iron	0.88	0.013	0.050	*	mg/L	1	9/23/2021 12:04:27 PM	62771
Magnesium	16	0.067	1.0		mg/L	1	9/23/2021 12:04:27 PM	62771
Manganese	0.51	0.00081	0.0020	*	mg/L	1	9/23/2021 12:04:27 PM	62771
Molybdenum	ND	0.0065	0.0080		mg/L	1	9/23/2021 12:04:27 PM	62771
Nickel	0.0057	0.0033	0.010	J	mg/L	1	9/23/2021 12:04:27 PM	62771
Potassium	3.0	0.16	1.0		mg/L	1	9/23/2021 12:04:27 PM	62771
Silver	ND	0.0013	0.0050		mg/L	1	9/23/2021 12:04:27 PM	62771
Sodium	720	1.9	10		mg/L	10	9/23/2021 12:05:51 PM	62771
Zinc	ND	0.0064	0.010		mg/L	1	9/23/2021 12:04:27 PM	62771
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/28/2021 3:57:13 PM	62771
Arsenic	0.0015	0.00013	0.0010		mg/L	1	9/28/2021 3:57:13 PM	62771
Copper	0.0039	0.00040	0.0010		mg/L	1	9/28/2021 3:57:13 PM	62771
Lead	0.00088	0.000061	0.00050		mg/L	1	9/28/2021 3:57:13 PM	62771
Selenium	0.0012	0.00037	0.0010		mg/L	1	9/28/2021 3:57:13 PM	62771
Thallium	ND	0.00025	0.00025		mg/L	1	9/28/2021 3:57:13 PM	62771
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:27:48 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-28
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:00:00 AM
Lab ID: 2109786-005G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	9/16/2021 3:33:53 PM	B81329
Barium	0.11	0.0011	0.0020		mg/L	1	9/16/2021 3:33:53 PM	B81329
Beryllium	ND	0.00088	0.0020		mg/L	1	9/16/2021 3:33:53 PM	B81329
Boron	2.0	0.033	0.20		mg/L	5	9/21/2021 11:13:13 AM	B81434
Cadmium	ND	0.0012	0.0020		mg/L	1	9/16/2021 3:33:53 PM	B81329
Chromium	ND	0.0020	0.0060		mg/L	1	9/16/2021 3:33:53 PM	B81329
Cobalt	0.0057	0.0024	0.0060	J	mg/L	1	9/16/2021 3:33:53 PM	B81329
Iron	ND	0.010	0.020		mg/L	1	9/16/2021 3:33:53 PM	B81329
Manganese	0.50	0.00058	0.0020	*	mg/L	1	9/16/2021 3:33:53 PM	B81329
Molybdenum	ND	0.0056	0.0080		mg/L	1	9/16/2021 3:33:53 PM	B81329
Nickel	0.0041	0.0033	0.010	J	mg/L	1	9/16/2021 3:33:53 PM	B81329
Silver	ND	0.0013	0.0050		mg/L	1	9/16/2021 3:33:53 PM	B81329
Zinc	0.014	0.0060	0.010		mg/L	1	9/16/2021 3:33:53 PM	B81329
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/18/2021 8:57:44 PM	B81374
Arsenic	0.0013	0.00012	0.0010		mg/L	1	9/18/2021 8:57:44 PM	B81374
Copper	0.0027	0.00037	0.0010		mg/L	1	9/19/2021 5:53:38 PM	C81396
Lead	ND	0.000057	0.00050		mg/L	1	9/18/2021 8:57:44 PM	B81374
Selenium	0.00052	0.00034	0.0010	J	mg/L	1	9/18/2021 8:57:44 PM	B81374
Thallium	ND	0.00025	0.00025		mg/L	1	9/18/2021 8:57:44 PM	B81374
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:30:12 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:25:00 AM
Lab ID: 2109786-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Toluene	ND	0.20	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Methyl tert-butyl ether (MTBE)	26	0.39	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Naphthalene	ND	0.50	2.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Acetone	ND	2.5	10		µg/L	1	9/17/2021 12:53:15 PM	R81384
Bromobenzene	ND	0.28	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Bromodichloromethane	ND	0.20	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Bromoform	ND	0.31	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
2-Butanone	ND	2.0	10		µg/L	1	9/17/2021 12:53:15 PM	R81384
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2021 12:53:15 PM	R81384
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Chloroethane	ND	0.38	2.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Chloromethane	ND	0.41	3.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Dibromochloromethane	ND	0.28	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Dibromomethane	ND	0.31	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,1-Dichloroethane	0.65	0.27	1.0	J	µg/L	1	9/17/2021 12:53:15 PM	R81384
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:25:00 AM
Lab ID: 2109786-006A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
2-Hexanone	ND	1.8	10		µg/L	1	9/17/2021 12:53:15 PM	R81384
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/17/2021 12:53:15 PM	R81384
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Styrene	ND	0.14	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2021 12:53:15 PM	R81384
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2021 12:53:15 PM	R81384
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	1	9/17/2021 12:53:15 PM	R81384
Surr: 4-Bromofluorobenzene	96.6	0	70-130		%Rec	1	9/17/2021 12:53:15 PM	R81384
Surr: Dibromofluoromethane	99.9	0	70-130		%Rec	1	9/17/2021 12:53:15 PM	R81384
Surr: Toluene-d8	102	0	70-130		%Rec	1	9/17/2021 12:53:15 PM	R81384
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **mb**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/17/2021 12:53:15 PM	R81384
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	9/17/2021 12:53:15 PM	R81384

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:25:00 AM
Lab ID: 2109786-006B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	9/21/2021 5:11:45 PM	62680

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:25:00 AM
Lab ID: 2109786-006C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.28	0.016	0.064		mg/L	1	9/21/2021 8:45:36 PM	62658
Motor Oil Range Organics (MRO)	0.071	0.052	0.080	J	mg/L	1	9/21/2021 8:45:36 PM	62658
Surr: DNOP	98.3	0	15-142		%Rec	1	9/21/2021 8:45:36 PM	62658

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:25:00 AM
Lab ID: 2109786-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Anthracene	ND	0.75	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Azobenzene	ND	0.55	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Benzoic acid	ND	1.1	20		µg/L	1	9/23/2021 12:33:26 PM	62647
Benzyl alcohol	ND	0.68	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/23/2021 12:33:26 PM	62647
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Carbazole	ND	0.56	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
4-Chloroaniline	ND	0.53	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
2-Chlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	9/23/2021 12:33:26 PM	62647
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/23/2021 12:33:26 PM	62647
Dibenzofuran	ND	0.38	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Diethyl phthalate	ND	3.9	10		µg/L	1	9/23/2021 12:33:26 PM	62647
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/23/2021 12:33:26 PM	62647
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Hexachloroethane	ND	0.45	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Isophorone	ND	0.40	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:25:00 AM
Lab ID: 2109786-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
2-Nitroaniline	ND	0.31	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
3-Nitroaniline	ND	1.6	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
4-Nitroaniline	ND	0.47	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Nitrobenzene	ND	0.51	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
2-Nitrophenol	ND	0.47	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
4-Nitrophenol	ND	0.28	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Pentachlorophenol	ND	0.59	20		µg/L	1	9/23/2021 12:33:26 PM	62647
Phenol	ND	0.33	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Pyridine	ND	0.93	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/23/2021 12:33:26 PM	62647
Surr: 2-Fluorophenol	50.3	0	15-87		%Rec	1	9/23/2021 12:33:26 PM	62647
Surr: Phenol-d5	41.5	0	15-67.5		%Rec	1	9/23/2021 12:33:26 PM	62647
Surr: 2,4,6-Tribromophenol	62.1	0	15-122		%Rec	1	9/23/2021 12:33:26 PM	62647
Surr: Nitrobenzene-d5	59.4	0	15-103		%Rec	1	9/23/2021 12:33:26 PM	62647
Surr: 2-Fluorobiphenyl	57.3	0	15-103		%Rec	1	9/23/2021 12:33:26 PM	62647
Surr: 4-Terphenyl-d14	92.7	0	45-137		%Rec	1	9/23/2021 12:33:26 PM	62647
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	2.2	0.048	1.0		µg/L	1	9/25/2021 12:04:00 AM	62617
Naphthalene	ND	0.034	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
Acenaphthylene	ND	0.043	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
Acenaphthene	ND	0.031	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
Fluorene	ND	0.031	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
Phenanthrene	ND	0.057	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
Anthracene	ND	0.034	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
Fluoranthene	ND	0.10	0.20		µg/L	1	9/25/2021 12:04:00 AM	62617
Pyrene	0.16	0.16	0.20	J	µg/L	1	9/25/2021 12:04:00 AM	62617
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
Chrysene	ND	0.024	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	9/25/2021 12:04:00 AM	62617
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	9/25/2021 12:04:00 AM	62617
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	9/25/2021 12:04:00 AM	62617

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:25:00 AM
Lab ID: 2109786-006D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: Nitrobenzene-d5	56.0	0	21.9-89.8		%Rec	1	9/25/2021 12:04:00 AM	62617
Surr: 2,4,6-Tribromophenol	66.5	0	23.4-71.6		%Rec	1	9/25/2021 12:04:00 AM	62617
Surr: 2-Fluorobiphenyl	51.5	0	15-84.5		%Rec	1	9/25/2021 12:04:00 AM	62617
Surr: 4-Terphenyl-d14	93.5	0	73.1-152		%Rec	1	9/25/2021 12:04:00 AM	62617

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:25:00 AM
Lab ID: 2109786-006E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	ND	0.20	0.50		mg/L	5	9/16/2021 3:05:34 PM	R81351
Chloride	1800	50	100	*	mg/L	200	9/21/2021 10:37:56 PM	A81455
Nitrogen, Nitrite (As N)	ND	0.11	2.0		mg/L	20	9/16/2021 3:18:25 PM	R81351
Nitrogen, Nitrate (As N)	0.19	0.050	0.50	J	mg/L	5	9/16/2021 3:05:34 PM	R81351
Sulfate	160	1.2	2.5		mg/L	5	9/16/2021 3:05:34 PM	R81351

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:25:00 AM
Lab ID: 2109786-006F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.85	0.0074	0.020	*	mg/L	1	9/23/2021 12:07:27 PM	62771
Barium	0.17	0.0016	0.0030		mg/L	1	9/23/2021 12:07:27 PM	62771
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2021 12:07:27 PM	62771
Boron	0.71	0.0074	0.040		mg/L	1	9/23/2021 12:07:27 PM	62771
Cadmium	ND	0.0015	0.0020		mg/L	1	9/23/2021 12:07:27 PM	62771
Calcium	380	1.1	10		mg/L	10	9/23/2021 12:09:06 PM	62771
Chromium	ND	0.0021	0.0060		mg/L	1	9/23/2021 12:07:27 PM	62771
Cobalt	0.0055	0.0024	0.0060	J	mg/L	1	9/23/2021 12:07:27 PM	62771
Iron	0.26	0.013	0.050		mg/L	1	9/23/2021 12:07:27 PM	62771
Magnesium	60	0.067	1.0		mg/L	1	9/23/2021 12:07:27 PM	62771
Manganese	4.7	0.0081	0.020	*	mg/L	10	9/23/2021 12:09:06 PM	62771
Molybdenum	ND	0.0065	0.0080		mg/L	1	9/23/2021 12:07:27 PM	62771
Nickel	0.016	0.0033	0.010		mg/L	1	9/23/2021 12:07:27 PM	62771
Potassium	0.76	0.16	1.0	J	mg/L	1	9/23/2021 12:07:27 PM	62771
Silver	0.0015	0.0013	0.0050	J	mg/L	1	9/23/2021 12:07:27 PM	62771
Sodium	890	1.9	10		mg/L	10	9/23/2021 12:09:06 PM	62771
Zinc	ND	0.0064	0.010		mg/L	1	9/23/2021 12:07:27 PM	62771
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/28/2021 3:59:39 PM	62771
Arsenic	0.00095	0.00013	0.0010	J	mg/L	1	9/28/2021 3:59:39 PM	62771
Copper	0.0066	0.00040	0.0010		mg/L	1	9/28/2021 3:59:39 PM	62771
Lead	0.00022	0.000061	0.00050	J	mg/L	1	9/28/2021 3:59:39 PM	62771
Selenium	0.00085	0.00037	0.0010	J	mg/L	1	9/28/2021 3:59:39 PM	62771
Thallium	ND	0.00025	0.00025		mg/L	1	9/28/2021 3:59:39 PM	62771
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:32:37 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-29
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:25:00 AM
Lab ID: 2109786-006G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	9/16/2021 3:35:37 PM	B81329
Barium	0.17	0.0011	0.0020		mg/L	1	9/16/2021 3:35:37 PM	B81329
Beryllium	ND	0.00088	0.0020		mg/L	1	9/16/2021 3:35:37 PM	B81329
Boron	0.69	0.0067	0.040		mg/L	1	9/16/2021 3:35:37 PM	B81329
Cadmium	ND	0.0012	0.0020		mg/L	1	9/16/2021 3:35:37 PM	B81329
Chromium	ND	0.0020	0.0060		mg/L	1	9/16/2021 3:35:37 PM	B81329
Cobalt	0.0062	0.0024	0.0060		mg/L	1	9/16/2021 3:35:37 PM	B81329
Iron	ND	0.010	0.020		mg/L	1	9/16/2021 3:35:37 PM	B81329
Manganese	4.8	0.0058	0.020	*	mg/L	10	9/17/2021 9:47:04 AM	A81359
Molybdenum	ND	0.0056	0.0080		mg/L	1	9/16/2021 3:35:37 PM	B81329
Nickel	0.014	0.0033	0.010		mg/L	1	9/16/2021 3:35:37 PM	B81329
Silver	0.0013	0.0013	0.0050	J	mg/L	1	9/16/2021 3:35:37 PM	B81329
Zinc	0.0077	0.0060	0.010	J	mg/L	1	9/16/2021 3:35:37 PM	B81329
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2021 4:01:23 PM	C81396
Arsenic	0.00083	0.00012	0.0010	J	mg/L	1	9/19/2021 4:01:23 PM	C81396
Copper	0.0060	0.00037	0.0010		mg/L	1	9/19/2021 4:01:23 PM	C81396
Lead	0.000097	0.000057	0.00050	J	mg/L	1	9/19/2021 4:01:23 PM	C81396
Selenium	0.00084	0.00034	0.0010	J	mg/L	1	9/19/2021 4:01:23 PM	C81396
Thallium	ND	0.00025	0.00025		mg/L	1	9/19/2021 4:01:23 PM	C81396
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:35:03 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:45:00 AM
Lab ID: 2109786-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Toluene	ND	0.20	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Methyl tert-butyl ether (MTBE)	2.8	0.39	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,2-Dichloroethane (EDC)	1.2	0.25	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Naphthalene	ND	0.50	2.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Acetone	2.6	2.5	10	J	µg/L	1	9/17/2021 1:22:02 PM	R81384
Bromobenzene	ND	0.28	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Bromodichloromethane	ND	0.20	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Bromoform	ND	0.31	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
2-Butanone	ND	2.0	10		µg/L	1	9/17/2021 1:22:02 PM	R81384
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2021 1:22:02 PM	R81384
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Chloroethane	ND	0.38	2.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Chloromethane	ND	0.41	3.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
cis-1,2-DCE	2.2	0.39	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Dibromochloromethane	ND	0.28	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Dibromomethane	ND	0.31	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,1-Dichloroethane	28	0.27	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,1-Dichloroethene	1.0	0.20	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:45:00 AM
Lab ID: 2109786-007A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
2-Hexanone	ND	1.8	10		µg/L	1	9/17/2021 1:22:02 PM	R81384
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/17/2021 1:22:02 PM	R81384
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Styrene	ND	0.14	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Trichloroethene (TCE)	1.2	0.20	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2021 1:22:02 PM	R81384
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2021 1:22:02 PM	R81384
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	9/17/2021 1:22:02 PM	R81384
Surr: 4-Bromofluorobenzene	97.9	0	70-130		%Rec	1	9/17/2021 1:22:02 PM	R81384
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	9/17/2021 1:22:02 PM	R81384
Surr: Toluene-d8	101	0	70-130		%Rec	1	9/17/2021 1:22:02 PM	R81384
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **mb**	
Gasoline Range Organics (GRO)	0.043	0.012	0.050	J	mg/L	1	9/17/2021 1:22:02 PM	R81384
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	9/17/2021 1:22:02 PM	R81384

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:45:00 AM
Lab ID: 2109786-007B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0094		µg/L	1	9/21/2021 5:26:47 PM	62680

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:45:00 AM
Lab ID: 2109786-007C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.10	0.016	0.064		mg/L	1	9/21/2021 9:09:43 PM	62658
Motor Oil Range Organics (MRO)	ND	0.052	0.080		mg/L	1	9/21/2021 9:09:43 PM	62658
Surr: DNOP	97.8	0	15-142		%Rec	1	9/21/2021 9:09:43 PM	62658

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:45:00 AM
Lab ID: 2109786-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Azobenzene	ND	0.55	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Benzoic acid	ND	1.1	20		µg/L	1	9/23/2021 1:15:20 PM	62647
Benzyl alcohol	ND	0.68	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/23/2021 1:15:20 PM	62647
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Carbazole	ND	0.56	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
4-Chloroaniline	ND	0.53	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
2-Chlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	9/23/2021 1:15:20 PM	62647
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/23/2021 1:15:20 PM	62647
Dibenzofuran	ND	0.38	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Diethyl phthalate	ND	3.9	10		µg/L	1	9/23/2021 1:15:20 PM	62647
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/23/2021 1:15:20 PM	62647
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Hexachloroethane	ND	0.45	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Isophorone	ND	0.40	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
2-Methylphenol	ND	0.51	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:45:00 AM
Lab ID: 2109786-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
2-Nitroaniline	ND	0.31	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
3-Nitroaniline	ND	1.6	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
4-Nitroaniline	ND	0.47	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Nitrobenzene	ND	0.51	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
2-Nitrophenol	ND	0.47	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
4-Nitrophenol	ND	0.28	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Pentachlorophenol	ND	0.59	20		µg/L	1	9/23/2021 1:15:20 PM	62647
Phenol	ND	0.33	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Pyridine	ND	0.93	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/23/2021 1:15:20 PM	62647
Surr: 2-Fluorophenol	54.1	0	15-87		%Rec	1	9/23/2021 1:15:20 PM	62647
Surr: Phenol-d5	41.9	0	15-67.5		%Rec	1	9/23/2021 1:15:20 PM	62647
Surr: 2,4,6-Tribromophenol	64.6	0	15-122		%Rec	1	9/23/2021 1:15:20 PM	62647
Surr: Nitrobenzene-d5	60.1	0	15-103		%Rec	1	9/23/2021 1:15:20 PM	62647
Surr: 2-Fluorobiphenyl	61.7	0	15-103		%Rec	1	9/23/2021 1:15:20 PM	62647
Surr: 4-Terphenyl-d14	90.2	0	45-137		%Rec	1	9/23/2021 1:15:20 PM	62647
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	13	0.048	1.0		µg/L	1	9/25/2021 12:48:00 AM	62617
Naphthalene	ND	0.034	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
Acenaphthylene	ND	0.043	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
Acenaphthene	ND	0.031	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
Fluorene	ND	0.031	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
Phenanthrene	ND	0.057	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
Anthracene	ND	0.034	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
Fluoranthene	ND	0.10	0.20		µg/L	1	9/25/2021 12:48:00 AM	62617
Pyrene	ND	0.16	0.20		µg/L	1	9/25/2021 12:48:00 AM	62617
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
Chrysene	ND	0.024	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	9/25/2021 12:48:00 AM	62617
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	9/25/2021 12:48:00 AM	62617
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	9/25/2021 12:48:00 AM	62617
Surr: Nitrobenzene-d5	60.0	0	21.9-89.8		%Rec	1	9/25/2021 12:48:00 AM	62617

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:45:00 AM
Lab ID: 2109786-007D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 2,4,6-Tribromophenol	55.0	0	23.4-71.6		%Rec	1	9/25/2021 12:48:00 AM	62617
Surr: 2-Fluorobiphenyl	53.0	0	15-84.5		%Rec	1	9/25/2021 12:48:00 AM	62617
Surr: 4-Terphenyl-d14	88.5	0	73.1-152		%Rec	1	9/25/2021 12:48:00 AM	62617

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:45:00 AM
Lab ID: 2109786-007E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	0.77	0.20	0.50		mg/L	5	9/16/2021 3:31:18 PM	R81351
Chloride	680	12	25	*	mg/L	50	9/21/2021 10:50:20 PM	A81455
Nitrogen, Nitrite (As N)	ND	0.027	0.50		mg/L	5	9/16/2021 3:31:18 PM	R81351
Nitrogen, Nitrate (As N)	0.14	0.050	0.50	J	mg/L	5	9/16/2021 3:31:18 PM	R81351
Sulfate	580	5.0	10	*	mg/L	20	9/16/2021 3:44:09 PM	R81351

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:45:00 AM
Lab ID: 2109786-007F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	5.7	0.074	0.20	*	mg/L	10	9/23/2021 12:16:49 PM	62771
Barium	0.088	0.0016	0.0030		mg/L	1	9/23/2021 12:15:34 PM	62771
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2021 12:15:34 PM	62771
Boron	0.74	0.0074	0.040		mg/L	1	9/23/2021 12:15:34 PM	62771
Cadmium	ND	0.0015	0.0020		mg/L	1	9/23/2021 12:15:34 PM	62771
Calcium	97	1.1	10		mg/L	10	9/23/2021 12:16:49 PM	62771
Chromium	ND	0.0021	0.0060		mg/L	1	9/23/2021 12:15:34 PM	62771
Cobalt	0.0031	0.0024	0.0060	J	mg/L	1	9/23/2021 12:15:34 PM	62771
Iron	1.8	0.13	0.50	*	mg/L	10	9/23/2021 12:16:49 PM	62771
Magnesium	19	0.067	1.0		mg/L	1	9/23/2021 12:15:34 PM	62771
Manganese	0.15	0.00081	0.0020	*	mg/L	1	9/23/2021 12:15:34 PM	62771
Molybdenum	ND	0.0065	0.0080		mg/L	1	9/23/2021 12:15:34 PM	62771
Nickel	0.016	0.0033	0.010		mg/L	1	9/23/2021 12:15:34 PM	62771
Potassium	1.6	0.16	1.0		mg/L	1	9/23/2021 12:15:34 PM	62771
Silver	ND	0.0013	0.0050		mg/L	1	9/23/2021 12:15:34 PM	62771
Sodium	820	1.9	10		mg/L	10	9/23/2021 12:16:49 PM	62771
Zinc	0.0074	0.0064	0.010	J	mg/L	1	9/23/2021 12:15:34 PM	62771
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/28/2021 4:09:22 PM	62771
Arsenic	0.00082	0.00013	0.0010	J	mg/L	1	9/28/2021 4:09:22 PM	62771
Copper	0.0032	0.00040	0.0010		mg/L	1	9/28/2021 4:09:22 PM	62771
Lead	0.0015	0.000061	0.00050		mg/L	1	9/28/2021 4:09:22 PM	62771
Selenium	0.0012	0.00037	0.0010		mg/L	1	9/28/2021 4:09:22 PM	62771
Thallium	ND	0.00025	0.00025		mg/L	1	9/28/2021 4:09:22 PM	62771
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	0.00023	0.00012	0.00020		mg/L	1	9/20/2021 5:42:16 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: MKTF-30
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:45:00 AM
Lab ID: 2109786-007G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	9/16/2021 3:37:19 PM	B81329
Barium	0.037	0.0011	0.0020		mg/L	1	9/16/2021 3:37:19 PM	B81329
Beryllium	ND	0.00088	0.0020		mg/L	1	9/16/2021 3:37:19 PM	B81329
Boron	0.74	0.0067	0.040		mg/L	1	9/16/2021 3:37:19 PM	B81329
Cadmium	ND	0.0012	0.0020		mg/L	1	9/16/2021 3:37:19 PM	B81329
Chromium	ND	0.0020	0.0060		mg/L	1	9/16/2021 3:37:19 PM	B81329
Cobalt	0.0038	0.0024	0.0060	J	mg/L	1	9/16/2021 3:37:19 PM	B81329
Iron	ND	0.010	0.020		mg/L	1	9/16/2021 3:37:19 PM	B81329
Manganese	0.0025	0.00058	0.0020		mg/L	1	9/16/2021 3:37:19 PM	B81329
Molybdenum	ND	0.0056	0.0080		mg/L	1	9/16/2021 3:37:19 PM	B81329
Nickel	0.015	0.0033	0.010		mg/L	1	9/16/2021 3:37:19 PM	B81329
Silver	ND	0.0013	0.0050		mg/L	1	9/16/2021 3:37:19 PM	B81329
Zinc	0.038	0.0060	0.010		mg/L	1	9/16/2021 3:37:19 PM	B81329
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	0.00047	0.00044	0.0010	J	mg/L	1	9/19/2021 4:06:08 PM	C81396
Arsenic	0.00050	0.00012	0.0010	J	mg/L	1	9/19/2021 4:06:08 PM	C81396
Copper	0.0019	0.00037	0.0010		mg/L	1	9/19/2021 4:06:08 PM	C81396
Lead	0.000062	0.000057	0.00050	J	mg/L	1	9/19/2021 4:06:08 PM	C81396
Selenium	0.00051	0.00034	0.0010	J	mg/L	1	9/19/2021 4:06:08 PM	C81396
Thallium	ND	0.00025	0.00025		mg/L	1	9/19/2021 4:06:08 PM	C81396
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:44:42 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:45:00 AM
Lab ID: 2109786-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Toluene	ND	0.20	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Naphthalene	ND	0.50	2.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Acetone	3.9	2.5	10	J	µg/L	1	9/17/2021 1:50:49 PM	R81384
Bromobenzene	ND	0.28	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Bromodichloromethane	ND	0.20	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Bromoform	ND	0.31	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
2-Butanone	2.4	2.0	10	J	µg/L	1	9/17/2021 1:50:49 PM	R81384
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2021 1:50:49 PM	R81384
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Chloroethane	ND	0.38	2.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Chloromethane	ND	0.41	3.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Dibromochloromethane	ND	0.28	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Dibromomethane	ND	0.31	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021 10:45:00 AM
Lab ID: 2109786-008A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
2-Hexanone	ND	1.8	10		µg/L	1	9/17/2021 1:50:49 PM	R81384
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/17/2021 1:50:49 PM	R81384
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Styrene	ND	0.14	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2021 1:50:49 PM	R81384
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2021 1:50:49 PM	R81384
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	1	9/17/2021 1:50:49 PM	R81384
Surr: 4-Bromofluorobenzene	97.4	0	70-130		%Rec	1	9/17/2021 1:50:49 PM	R81384
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	9/17/2021 1:50:49 PM	R81384
Surr: Toluene-d8	99.9	0	70-130		%Rec	1	9/17/2021 1:50:49 PM	R81384
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **mb**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/17/2021 1:50:49 PM	R81384
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	9/17/2021 1:50:49 PM	R81384

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021
Lab ID: 2109786-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Benzene	ND	0.23	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Toluene	ND	0.20	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Methyl tert-butyl ether (MTBE)	14	0.39	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,2-Dichloroethane (EDC)	0.42	0.25	1.0	J	µg/L	1	9/23/2021 2:58:06 PM	R81542
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Naphthalene	ND	0.50	2.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Acetone	2.7	2.5	10	J	µg/L	1	9/23/2021 2:58:06 PM	R81542
Bromobenzene	ND	0.28	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Bromodichloromethane	ND	0.20	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Bromoform	ND	0.31	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Bromomethane	ND	0.85	3.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
2-Butanone	ND	2.0	10		µg/L	1	9/23/2021 2:58:06 PM	R81542
Carbon disulfide	ND	0.59	10		µg/L	1	9/23/2021 2:58:06 PM	R81542
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Chloroethane	ND	0.38	2.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Chloroform	ND	0.13	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Chloromethane	ND	0.41	3.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Dibromochloromethane	ND	0.28	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Dibromomethane	ND	0.31	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,1-Dichloroethane	1.3	0.27	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,1-Dichloroethene	0.32	0.20	1.0	J	µg/L	1	9/23/2021 2:58:06 PM	R81542
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021
Lab ID: 2109786-009A
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
2-Hexanone	ND	1.8	10		µg/L	1	9/23/2021 2:58:06 PM	R81542
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/23/2021 2:58:06 PM	R81542
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Styrene	ND	0.14	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/23/2021 2:58:06 PM	R81542
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/23/2021 2:58:06 PM	R81542
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%Rec	1	9/23/2021 2:58:06 PM	R81542
Surr: 4-Bromofluorobenzene	99.5	0	70-130		%Rec	1	9/23/2021 2:58:06 PM	R81542
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	9/23/2021 2:58:06 PM	R81542
Surr: Toluene-d8	104	0	70-130		%Rec	1	9/23/2021 2:58:06 PM	R81542
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **mb**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/23/2021 2:58:06 PM	R81542
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	9/23/2021 2:58:06 PM	R81542

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021
Lab ID: 2109786-009B
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8011/504.1: EDB							Analyst: **JME**	
1,2-Dibromoethane	ND	0.0034	0.0093		µg/L	1	9/21/2021 5:41:50 PM	62680

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021
Lab ID: 2109786-009C
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D MOD: DIESEL RANGE							Analyst: **SB**	
Diesel Range Organics (DRO)	0.15	0.016	0.064		mg/L	1	9/21/2021 9:33:54 PM	62658
Motor Oil Range Organics (MRO)	0.056	0.052	0.080	J	mg/L	1	9/21/2021 9:33:54 PM	62658
Surr: DNOP	96.6	0	15-142		%Rec	1	9/21/2021 9:33:54 PM	62658

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021
Lab ID: 2109786-009D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Aniline	ND	0.50	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Azobenzene	ND	0.55	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Benzoic acid	ND	1.1	20		µg/L	1	9/23/2021 1:57:15 PM	62647
Benzyl alcohol	ND	0.68	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Bis(2-chloroethoxy)methane	ND	0.41	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Bis(2-chloroethyl)ether	ND	0.63	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Bis(2-chloroisopropyl)ether	ND	0.54	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Bis(2-ethylhexyl)phthalate	ND	4.5	10		µg/L	1	9/23/2021 1:57:15 PM	62647
4-Bromophenyl phenyl ether	ND	0.77	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Butyl benzyl phthalate	ND	0.74	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Carbazole	ND	0.56	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
4-Chloro-3-methylphenol	ND	0.41	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
4-Chloroaniline	ND	0.53	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
2-Chloronaphthalene	ND	0.59	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
2-Chlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
4-Chlorophenyl phenyl ether	ND	0.57	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Di-n-butyl phthalate	ND	6.5	10		µg/L	1	9/23/2021 1:57:15 PM	62647
Di-n-octyl phthalate	ND	3.1	20		µg/L	1	9/23/2021 1:57:15 PM	62647
Dibenzofuran	ND	0.38	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
1,2-Dichlorobenzene	ND	0.75	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
1,3-Dichlorobenzene	ND	0.64	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
1,4-Dichlorobenzene	ND	0.70	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
3,3´-Dichlorobenzidine	ND	0.51	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Diethyl phthalate	ND	3.9	10		µg/L	1	9/23/2021 1:57:15 PM	62647
Dimethyl phthalate	ND	2.0	10		µg/L	1	9/23/2021 1:57:15 PM	62647
2,4-Dichlorophenol	ND	0.58	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
2,4-Dimethylphenol	ND	0.97	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
4,6-Dinitro-2-methylphenol	ND	0.53	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
2,4-Dinitrophenol	ND	0.50	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
2,4-Dinitrotoluene	ND	0.62	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
2,6-Dinitrotoluene	ND	0.58	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Hexachlorobenzene	ND	0.66	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Hexachlorobutadiene	ND	0.82	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Hexachlorocyclopentadiene	ND	0.65	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Hexachloroethane	ND	0.45	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Isophorone	ND	0.40	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
2-Methylnaphthalene	ND	0.41	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
3+4-Methylphenol	ND	0.45	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
N-Nitrosodi-n-propylamine	ND	0.48	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
N-Nitrosodimethylamine	ND	0.36	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647

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Qualifiers:

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E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
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RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021
Lab ID: 2109786-009D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
N-Nitrosodiphenylamine	ND	1.0	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
2-Nitroaniline	ND	0.31	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
3-Nitroaniline	ND	1.6	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
4-Nitroaniline	ND	0.47	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Nitrobenzene	ND	0.51	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
2-Nitrophenol	ND	0.47	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
4-Nitrophenol	ND	0.28	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Pentachlorophenol	ND	0.59	20		µg/L	1	9/23/2021 1:57:15 PM	62647
Phenol	ND	0.33	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Pyridine	ND	0.93	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
1,2,4-Trichlorobenzene	ND	0.58	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
2,4,5-Trichlorophenol	ND	0.62	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
2,4,6-Trichlorophenol	ND	0.43	5.0		µg/L	1	9/23/2021 1:57:15 PM	62647
Surr: 2-Fluorophenol	43.5	0	15-87		%Rec	1	9/23/2021 1:57:15 PM	62647
Surr: Phenol-d5	34.7	0	15-67.5		%Rec	1	9/23/2021 1:57:15 PM	62647
Surr: 2,4,6-Tribromophenol	64.3	0	15-122		%Rec	1	9/23/2021 1:57:15 PM	62647
Surr: Nitrobenzene-d5	51.2	0	15-103		%Rec	1	9/23/2021 1:57:15 PM	62647
Surr: 2-Fluorobiphenyl	53.4	0	15-103		%Rec	1	9/23/2021 1:57:15 PM	62647
Surr: 4-Terphenyl-d14	92.7	0	45-137		%Rec	1	9/23/2021 1:57:15 PM	62647
EPA METHOD 8270SIM							Analyst: **DAM**	
1,4-Dioxane	4.2	0.048	1.0		µg/L	1	9/25/2021 1:31:00 AM	62617
Naphthalene	ND	0.034	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
1-Methylnaphthalene	ND	0.024	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
2-Methylnaphthalene	ND	0.034	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
Acenaphthylene	ND	0.043	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
Acenaphthene	ND	0.031	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
Fluorene	ND	0.031	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
Phenanthrene	ND	0.057	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
Anthracene	ND	0.034	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
Fluoranthene	ND	0.10	0.20		µg/L	1	9/25/2021 1:31:00 AM	62617
Pyrene	ND	0.16	0.20		µg/L	1	9/25/2021 1:31:00 AM	62617
Benz(a)anthracene	ND	0.036	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
Chrysene	ND	0.024	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
Benzo(b)fluoranthene	ND	0.057	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
Benzo(k)fluoranthene	ND	0.036	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
Benzo(a)pyrene	ND	0.034	0.070		µg/L	1	9/25/2021 1:31:00 AM	62617
Dibenz(a,h)anthracene	ND	0.034	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
Benzo(g,h,i)perylene	ND	0.034	0.10		µg/L	1	9/25/2021 1:31:00 AM	62617
Indeno(1,2,3-cd)pyrene	ND	0.043	0.30		µg/L	1	9/25/2021 1:31:00 AM	62617
Surr: Nitrobenzene-d5	55.0	0	21.9-89.8		%Rec	1	9/25/2021 1:31:00 AM	62617

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Qualifiers:

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PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021
Lab ID: 2109786-009D
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270SIM							Analyst: **DAM**	
Surr: 2,4,6-Tribromophenol	58.0	0	23.4-71.6		%Rec	1	9/25/2021 1:31:00 AM	62617
Surr: 2-Fluorobiphenyl	50.5	0	15-84.5		%Rec	1	9/25/2021 1:31:00 AM	62617
Surr: 4-Terphenyl-d14	89.5	0	73.1-152		%Rec	1	9/25/2021 1:31:00 AM	62617

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021
Lab ID: 2109786-009E
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Fluoride	1.6	0.20	0.50		mg/L	5	9/16/2021 3:57:01 PM	R81351
Chloride	2500	50	100	*	mg/L	200	9/21/2021 11:02:45 PM	A81455
Nitrogen, Nitrite (As N)	ND	0.11	2.0		mg/L	20	9/16/2021 4:09:54 PM	R81351
Nitrogen, Nitrate (As N)	0.32	0.050	0.50	J	mg/L	5	9/16/2021 3:57:01 PM	R81351
Sulfate	150	1.2	2.5		mg/L	5	9/16/2021 3:57:01 PM	R81351

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021
Lab ID: 2109786-009F
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Aluminum	0.62	0.0074	0.020	*	mg/L	1	9/23/2021 12:18:26 PM	62771
Barium	0.070	0.0016	0.0030		mg/L	1	9/23/2021 12:18:26 PM	62771
Beryllium	ND	0.00088	0.0020		mg/L	1	9/23/2021 12:18:26 PM	62771
Boron	0.60	0.0074	0.040		mg/L	1	9/23/2021 12:18:26 PM	62771
Cadmium	ND	0.0015	0.0020		mg/L	1	9/23/2021 12:18:26 PM	62771
Calcium	160	1.1	10		mg/L	10	9/23/2021 12:20:05 PM	62771
Chromium	ND	0.0021	0.0060		mg/L	1	9/23/2021 12:18:26 PM	62771
Cobalt	0.0026	0.0024	0.0060	J	mg/L	1	9/23/2021 12:18:26 PM	62771
Iron	0.26	0.013	0.050		mg/L	1	9/23/2021 12:18:26 PM	62771
Magnesium	28	0.067	1.0		mg/L	1	9/23/2021 12:18:26 PM	62771
Manganese	0.043	0.00081	0.0020		mg/L	1	9/23/2021 12:18:26 PM	62771
Molybdenum	ND	0.0065	0.0080		mg/L	1	9/23/2021 12:18:26 PM	62771
Nickel	0.030	0.0033	0.010		mg/L	1	9/23/2021 12:18:26 PM	62771
Potassium	11	0.16	1.0		mg/L	1	9/23/2021 12:18:26 PM	62771
Silver	ND	0.0013	0.0050		mg/L	1	9/23/2021 12:18:26 PM	62771
Sodium	1600	3.7	20		mg/L	20	9/23/2021 12:37:48 PM	62771
Zinc	ND	0.0064	0.010		mg/L	1	9/23/2021 12:18:26 PM	62771
EPA 200.8: METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/28/2021 4:11:47 PM	62771
Arsenic	0.00057	0.00013	0.0010	J	mg/L	1	9/28/2021 4:11:47 PM	62771
Copper	0.0032	0.00040	0.0010		mg/L	1	9/28/2021 4:11:47 PM	62771
Lead	0.00026	0.000061	0.00050	J	mg/L	1	9/28/2021 4:11:47 PM	62771
Selenium	0.0014	0.00037	0.0010		mg/L	1	9/28/2021 4:11:47 PM	62771
Thallium	ND	0.00025	0.00025		mg/L	1	9/28/2021 4:11:47 PM	62771
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:47:07 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP-09-15-21
Project: 2021 GW Sampling 3rd Quarter
Collection Date: 9/15/2021
Lab ID: 2109786-009G
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **ELS**	
Aluminum	ND	0.0056	0.020		mg/L	1	9/16/2021 3:39:01 PM	B81329
Barium	0.067	0.0011	0.0020		mg/L	1	9/16/2021 3:39:01 PM	B81329
Beryllium	ND	0.00088	0.0020		mg/L	1	9/16/2021 3:39:01 PM	B81329
Boron	0.60	0.0067	0.040		mg/L	1	9/16/2021 3:39:01 PM	B81329
Cadmium	ND	0.0012	0.0020		mg/L	1	9/16/2021 3:39:01 PM	B81329
Chromium	ND	0.0020	0.0060		mg/L	1	9/16/2021 3:39:01 PM	B81329
Cobalt	0.0039	0.0024	0.0060	J	mg/L	1	9/16/2021 3:39:01 PM	B81329
Copper	0.0048	0.0035	0.0060	J	mg/L	1	9/16/2021 3:39:01 PM	B81329
Iron	ND	0.010	0.020		mg/L	1	9/16/2021 3:39:01 PM	B81329
Manganese	0.020	0.00058	0.0020		mg/L	1	9/16/2021 3:39:01 PM	B81329
Molybdenum	0.0060	0.0056	0.0080	J	mg/L	1	9/16/2021 3:39:01 PM	B81329
Nickel	0.030	0.0033	0.010		mg/L	1	9/16/2021 3:39:01 PM	B81329
Silver	ND	0.0013	0.0050		mg/L	1	9/16/2021 3:39:01 PM	B81329
Zinc	0.048	0.0060	0.010		mg/L	1	9/16/2021 3:39:01 PM	B81329
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Antimony	ND	0.00044	0.0010		mg/L	1	9/19/2021 4:10:52 PM	C81396
Arsenic	0.00045	0.00012	0.0010	J	mg/L	1	9/19/2021 4:10:52 PM	C81396
Copper	0.0027	0.00037	0.0010		mg/L	1	9/19/2021 4:10:52 PM	C81396
Lead	0.000063	0.000057	0.00050	J	mg/L	1	9/19/2021 4:10:52 PM	C81396
Selenium	0.00081	0.00034	0.0010	J	mg/L	1	9/19/2021 4:10:52 PM	C81396
Thallium	ND	0.00025	0.00025		mg/L	1	9/19/2021 4:10:52 PM	C81396
EPA METHOD 245.1: MERCURY							Analyst: **ags**	
Mercury	ND	0.00012	0.00020		mg/L	1	9/20/2021 5:49:31 PM	62684

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2109786-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Toluene	ND	0.20	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Naphthalene	ND	0.50	2.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Acetone	ND	2.5	10		µg/L	1	9/17/2021 3:46:07 PM	R81384
Bromobenzene	ND	0.28	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Bromodichloromethane	ND	0.20	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Bromoform	ND	0.31	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
2-Butanone	ND	2.0	10		µg/L	1	9/17/2021 3:46:07 PM	R81384
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2021 3:46:07 PM	R81384
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Chloroethane	ND	0.38	2.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Chloromethane	ND	0.41	3.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Dibromochloromethane	ND	0.28	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Dibromomethane	ND	0.31	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank
Project: 2021 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2109786-010A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
2-Hexanone	ND	1.8	10		µg/L	1	9/17/2021 3:46:07 PM	R81384
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/17/2021 3:46:07 PM	R81384
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Styrene	ND	0.14	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2021 3:46:07 PM	R81384
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2021 3:46:07 PM	R81384
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	9/17/2021 3:46:07 PM	R81384
Surr: 4-Bromofluorobenzene	98.4	0	70-130		%Rec	1	9/17/2021 3:46:07 PM	R81384
Surr: Dibromofluoromethane	108	0	70-130		%Rec	1	9/17/2021 3:46:07 PM	R81384
Surr: Toluene-d8	106	0	70-130		%Rec	1	9/17/2021 3:46:07 PM	R81384
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **mb**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/17/2021 3:46:07 PM	R81384
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	9/17/2021 3:46:07 PM	R81384

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank-2
Project: 2021 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2109786-011A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Benzene	ND	0.23	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Toluene	ND	0.20	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Ethylbenzene	ND	0.21	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Methyl tert-butyl ether (MTBE)	ND	0.39	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,2,4-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,3,5-Trimethylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,2-Dichloroethane (EDC)	ND	0.25	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,2-Dibromoethane (EDB)	ND	0.30	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Naphthalene	ND	0.50	2.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1-Methylnaphthalene	ND	0.84	4.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
2-Methylnaphthalene	ND	0.69	4.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Acetone	ND	2.5	10		µg/L	1	9/17/2021 4:14:59 PM	R81384
Bromobenzene	ND	0.28	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Bromodichloromethane	ND	0.20	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Bromoform	ND	0.31	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Bromomethane	ND	0.85	3.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
2-Butanone	ND	2.0	10		µg/L	1	9/17/2021 4:14:59 PM	R81384
Carbon disulfide	ND	0.59	10		µg/L	1	9/17/2021 4:14:59 PM	R81384
Carbon Tetrachloride	ND	0.18	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Chlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Chloroethane	ND	0.38	2.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Chloroform	ND	0.13	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Chloromethane	ND	0.41	3.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
2-Chlorotoluene	ND	0.13	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
4-Chlorotoluene	ND	0.34	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
cis-1,2-DCE	ND	0.39	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
cis-1,3-Dichloropropene	ND	0.36	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,2-Dibromo-3-chloropropane	ND	0.59	2.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Dibromochloromethane	ND	0.28	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Dibromomethane	ND	0.31	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,2-Dichlorobenzene	ND	0.15	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,3-Dichlorobenzene	ND	0.16	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,4-Dichlorobenzene	ND	0.21	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Dichlorodifluoromethane	ND	0.40	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,1-Dichloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,1-Dichloroethene	ND	0.20	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,2-Dichloropropane	ND	0.20	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,3-Dichloropropane	ND	0.18	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
2,2-Dichloropropane	ND	0.26	2.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,1-Dichloropropene	ND	0.18	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **2109786**
Date Reported: **11/3/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: Trip Blank-2
Project: 2021 GW Sampling 3rd Quarter
Collection Date:
Lab ID: 2109786-011A
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **mb**	
Hexachlorobutadiene	ND	0.56	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
2-Hexanone	ND	1.8	10		µg/L	1	9/17/2021 4:14:59 PM	R81384
Isopropylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
4-Isopropyltoluene	ND	0.20	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
4-Methyl-2-pentanone	ND	0.88	10		µg/L	1	9/17/2021 4:14:59 PM	R81384
Methylene Chloride	ND	0.50	3.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
n-Butylbenzene	ND	0.25	3.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
n-Propylbenzene	ND	0.18	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
sec-Butylbenzene	ND	0.14	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Styrene	ND	0.14	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
tert-Butylbenzene	ND	0.24	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,1,1,2-Tetrachloroethane	ND	0.27	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,1,2,2-Tetrachloroethane	ND	0.27	2.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Tetrachloroethene (PCE)	ND	0.36	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
trans-1,2-DCE	ND	0.19	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
trans-1,3-Dichloropropene	ND	0.34	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,2,3-Trichlorobenzene	ND	0.25	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,2,4-Trichlorobenzene	ND	0.24	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,1,1-Trichloroethane	ND	0.30	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,1,2-Trichloroethane	ND	0.20	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Trichloroethene (TCE)	ND	0.20	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Trichlorofluoromethane	ND	0.16	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
1,2,3-Trichloropropane	ND	0.44	2.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Vinyl chloride	ND	0.32	1.0		µg/L	1	9/17/2021 4:14:59 PM	R81384
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/17/2021 4:14:59 PM	R81384
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	9/17/2021 4:14:59 PM	R81384
Surr: 4-Bromofluorobenzene	96.5	0	70-130		%Rec	1	9/17/2021 4:14:59 PM	R81384
Surr: Dibromofluoromethane	104	0	70-130		%Rec	1	9/17/2021 4:14:59 PM	R81384
Surr: Toluene-d8	104	0	70-130		%Rec	1	9/17/2021 4:14:59 PM	R81384
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **mb**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	9/17/2021 4:14:59 PM	R81384
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	9/17/2021 4:14:59 PM	R81384

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **A81359**	RunNo: **81359**
Prep Date:	Analysis Date: **9/17/2021**	SeqNo: **2873395** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0030								
Iron	ND	0.050								
Manganese	ND	0.0020								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **A81359**	RunNo: **81359**
Prep Date:	Analysis Date: **9/17/2021**	SeqNo: **2873397** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0030	0.002000	0	95.2	50	150			J
Iron	0.022	0.050	0.02000	0	112	50	150			J
Manganese	0.0019	0.0020	0.002000	0	93.4	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **A81359**	RunNo: **81359**
Prep Date:	Analysis Date: **9/17/2021**	SeqNo: **2873399** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0030	0.5000	0	101	85	115			
Iron	0.51	0.050	0.5000	0	103	85	115			
Manganese	0.49	0.0020	0.5000	0	98.7	85	115			

Sample ID: **MB-62771**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **62771**	RunNo: **81529**
Prep Date: **9/22/2021**	Analysis Date: **9/23/2021**	SeqNo: **2880368** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62771** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **62771** RunNo: **81529**
Prep Date: **9/22/2021** Analysis Date: **9/23/2021** SeqNo: **2880368** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID: **LLLCS-62771** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **62771** RunNo: **81529**
Prep Date: **9/22/2021** Analysis Date: **9/23/2021** SeqNo: **2880370** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.011	0.020	0.01000	0	105	50	150			J
Barium	0.0023	0.0030	0.002000	0	115	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	96.2	50	150			J
Boron	0.039	0.040	0.04000	0	96.7	50	150			J
Cadmium	0.0021	0.0020	0.002000	0	104	50	150			
Calcium	0.53	1.0	0.5000	0	106	50	150			J
Chromium	0.0059	0.0060	0.006000	0	98.8	50	150			J
Cobalt	0.0061	0.0060	0.006000	0	101	50	150			
Iron	0.025	0.050	0.02000	0	127	50	150			J
Magnesium	0.49	1.0	0.5000	0	98.4	50	150			J
Manganese	0.0020	0.0020	0.002000	0	98.2	50	150			J
Molybdenum	0.0072	0.0080	0.008000	0	90.1	50	150			J
Nickel	0.0062	0.010	0.005000	0	123	50	150			J
Potassium	0.48	1.0	0.5000	0	95.3	50	150			J
Silver	0.0050	0.0050	0.005000	0	100	50	150			
Sodium	0.52	1.0	0.5000	0	105	50	150			J
Zinc	0.011	0.010	0.01000	0	109	50	150			

Sample ID: **LCS-62771** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **62771** RunNo: **81529**
Prep Date: **9/22/2021** Analysis Date: **9/23/2021** SeqNo: **2880373** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	105	85	115			
Barium	0.51	0.0030	0.5000	0	101	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Boron	0.52	0.040	0.5000	0	105	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Calcium	49	1.0	50.00	0	98.3	85	115			
Chromium	0.52	0.0060	0.5000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **LCS-62771** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **62771** RunNo: **81529**
Prep Date: **9/22/2021** Analysis Date: **9/23/2021** SeqNo: **2880373** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.49	0.0060	0.5000	0	98.8	85	115			
Iron	0.49	0.050	0.5000	0	97.4	85	115			
Magnesium	48	1.0	50.00	0	96.1	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.49	0.010	0.5000	0	97.2	85	115			
Potassium	47	1.0	50.00	0	94.2	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Sodium	48	1.0	50.00	0	96.9	85	115			
Zinc	0.47	0.010	0.5000	0	94.9	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B81329** RunNo: **81329**
Prep Date: Analysis Date: **9/16/2021** SeqNo: **2872614** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	0.014	0.020								J
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B81329** RunNo: **81329**
Prep Date: Analysis Date: **9/16/2021** SeqNo: **2872615** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.0099	0.020	0.01000	0	98.8	50	150			J
Barium	0.0020	0.0020	0.002000	0	102	50	150			
Beryllium	0.0023	0.0020	0.002000	0	113	50	150			
Boron	0.038	0.040	0.04000	0	95.2	50	150			J
Cadmium	0.0021	0.0020	0.002000	0	103	50	150			
Chromium	0.0055	0.0060	0.006000	0	91.7	50	150			J
Cobalt	0.0059	0.0060	0.006000	0	98.0	50	150			J
Copper	0.0058	0.0060	0.006000	0	96.6	50	150			J
Iron	0.020	0.020	0.02000	0	97.7	50	150			J
Manganese	0.0019	0.0020	0.002000	0	92.7	50	150			J
Molybdenum	0.0076	0.0080	0.008000	0	94.9	50	150			J
Nickel	0.0040	0.010	0.005000	0	79.2	50	150			J
Silver	0.0047	0.0050	0.005000	0	94.6	50	150			J
Zinc	0.011	0.010	0.01000	0	111	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B81329** RunNo: **81329**
Prep Date: Analysis Date: **9/16/2021** SeqNo: **2872616** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B81329** RunNo: **81329**
Prep Date: Analysis Date: **9/16/2021** SeqNo: **2872616** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.57	0.020	0.5000	0	114	85	115			
Barium	0.50	0.0020	0.5000	0	99.6	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Boron	0.50	0.040	0.5000	0	101	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.49	0.0060	0.5000	0	98.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Copper	0.47	0.0060	0.5000	0	94.0	85	115			
Iron	0.49	0.020	0.5000	0	98.4	85	115			
Manganese	0.48	0.0020	0.5000	0	96.1	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.1	85	115			
Nickel	0.48	0.010	0.5000	0	95.4	85	115			
Silver	0.098	0.0050	0.1000	0	98.2	85	115			
Zinc	0.50	0.010	0.5000	0	99.6	85	115			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **A81359** RunNo: **81359**
Prep Date: Analysis Date: **9/17/2021** SeqNo: **2873402** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Iron	ND	0.020								
Manganese	ND	0.0020								

Sample ID: **LLLCS** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **A81359** RunNo: **81359**
Prep Date: Analysis Date: **9/17/2021** SeqNo: **2873403** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0019	0.0020	0.002000	0	95.2	50	150			J
Iron	0.022	0.020	0.02000	0	112	50	150			
Manganese	0.0019	0.0020	0.002000	0	93.4	50	150			J

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **A81359** RunNo: **81359**
Prep Date: Analysis Date: **9/17/2021** SeqNo: **2873404** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	101	85	115			
Iron	0.51	0.020	0.5000	0	103	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**

03-Nov-21

Client: Marathon

Project: 2021 GW Sampling 3rd Quarter

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A81359**	RunNo: **81359**
Prep Date:	Analysis Date: **9/17/2021**	SeqNo: **2873404** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.49	0.0020	0.5000	0	98.7	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B81434**	RunNo: **81434**
Prep Date:	Analysis Date: **9/21/2021**	SeqNo: **2876913** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B81434**	RunNo: **81434**
Prep Date:	Analysis Date: **9/21/2021**	SeqNo: **2876914** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.039	0.040	0.04000	0	97.2	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B81434**	RunNo: **81434**
Prep Date:	Analysis Date: **9/21/2021**	SeqNo: **2876915** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.52	0.040	0.5000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62771** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **62771** RunNo: **81552**
Prep Date: **9/22/2021** Analysis Date: **9/24/2021** SeqNo: **2881747** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: **MSLLLCS-62771** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **62771** RunNo: **81552**
Prep Date: **9/22/2021** Analysis Date: **9/24/2021** SeqNo: **2881748** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	104	50	150			
Arsenic	0.00099	0.0010	0.001000	0	99.1	50	150			J
Copper	0.0010	0.0010	0.001000	0	103	50	150			
Lead	0.00048	0.00050	0.0005000	0	96.7	50	150			J
Selenium	0.00099	0.0010	0.001000	0	99.0	50	150			J

Sample ID: **MSLCS-62771** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **62771** RunNo: **81552**
Prep Date: **9/22/2021** Analysis Date: **9/24/2021** SeqNo: **2881749** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.028	0.0010	0.02500	0	112	85	115			
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Copper	0.026	0.0010	0.02500	0	103	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			
Thallium	0.013	0.00025	0.01250	0	103	85	115			

Sample ID: **MSLLLCS-TL-62771** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **62771** RunNo: **81552**
Prep Date: **9/22/2021** Analysis Date: **9/24/2021** SeqNo: **2881750** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	0.00025	0.00025	0.0002500	0	101	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B81374**	RunNo: **81374**
Prep Date:	Analysis Date: **9/18/2021**	SeqNo: **2873897** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								
Uranium	ND	0.00050								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B81374**	RunNo: **81374**
Prep Date:	Analysis Date: **9/18/2021**	SeqNo: **2873898** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	109	50	150			
Arsenic	0.0011	0.0010	0.001000	0	108	50	150			
Copper	0.00097	0.0010	0.001000	0	97.2	50	150			J
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	0.00086	0.0010	0.001000	0	86.0	50	150			J
Thallium	0.00051	0.00025	0.0005000	0	102	50	150			
Uranium	0.00049	0.00050	0.0005000	0	97.2	50	150			J

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B81374**	RunNo: **81374**
Prep Date:	Analysis Date: **9/18/2021**	SeqNo: **2873899** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.4	85	115			
Copper	0.024	0.0010	0.02500	0	97.5	85	115			
Lead	0.012	0.00050	0.01250	0	98.5	85	115			
Selenium	0.025	0.0010	0.02500	0	99.0	85	115			
Thallium	0.012	0.00025	0.01250	0	98.5	85	115			
Uranium	0.012	0.00050	0.01250	0	93.8	85	115			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C81396**	RunNo: **81396**
Prep Date:	Analysis Date: **9/19/2021**	SeqNo: **2875124** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **C81396** RunNo: **81396**
Prep Date: Analysis Date: **9/19/2021** SeqNo: **2875124** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Thallium	ND	0.00025								

Sample ID: **LCSLL** SampType: **LCSLL** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **C81396** RunNo: **81396**
Prep Date: Analysis Date: **9/19/2021** SeqNo: **2875125** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0011	0.0010	0.001000	0	109	50	150			
Arsenic	0.0010	0.0010	0.001000	0	101	50	150			
Copper	0.0011	0.0010	0.001000	0	111	50	150			
Lead	0.00051	0.00050	0.0005000	0	103	50	150			
Selenium	0.0011	0.0010	0.001000	0	106	50	150			
Thallium	0.00050	0.00025	0.0005000	0	99.2	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **C81396** RunNo: **81396**
Prep Date: Analysis Date: **9/19/2021** SeqNo: **2875211** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.3	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.9	85	115			
Copper	0.025	0.0010	0.02500	0	99.2	85	115			
Lead	0.012	0.00050	0.01250	0	95.8	85	115			
Selenium	0.025	0.0010	0.02500	0	102	85	115			
Thallium	0.012	0.00025	0.01250	0	96.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62684** SampType: **MBLK** TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW** Batch ID: **62684** RunNo: **81422**
Prep Date: **9/20/2021** Analysis Date: **9/20/2021** SeqNo: **2876437** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LLLCS-62684** SampType: **LCSLL** TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC** Batch ID: **62684** RunNo: **81422**
Prep Date: **9/20/2021** Analysis Date: **9/20/2021** SeqNo: **2876438** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00010	0.00020	0.0001500	0	68.8	50	150			J

Sample ID: **LCS-62684** SampType: **LCS** TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW** Batch ID: **62684** RunNo: **81422**
Prep Date: **9/20/2021** Analysis Date: **9/20/2021** SeqNo: **2876439** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	95.5	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R81351**	RunNo: **81351**
Prep Date:	Analysis Date: **9/16/2021**	SeqNo: **2873038** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R81351**	RunNo: **81351**
Prep Date:	Analysis Date: **9/16/2021**	SeqNo: **2873046** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	96.1	90	110			
Chloride	4.6	0.50	5.000	0	92.5	90	110			
Nitrogen, Nitrite (As N)	0.92	0.10	1.000	0	92.2	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	95.8	90	110			
Sulfate	9.4	0.50	10.00	0	93.9	90	110			

Sample ID: **2109786-002EMS**	SampType: **ms**	TestCode: **EPA Method 300.0: Anions**
Client ID: **MKTF-10**	Batch ID: **R81351**	RunNo: **81351**
Prep Date:	Analysis Date: **9/16/2021**	SeqNo: **2873050** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.9	0.50	2.500	0.6300	91.2	73.3	111			
Nitrogen, Nitrite (As N)	3.8	0.50	5.000	0	75.8	75.5	113			
Nitrogen, Nitrate (As N)	11	0.50	12.50	0	89.6	86.8	110			
Sulfate	47	2.5	50.00	0	94.5	83.3	112			

Sample ID: **2109786-002EMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **MKTF-10**	Batch ID: **R81351**	RunNo: **81351**
Prep Date:	Analysis Date: **9/16/2021**	SeqNo: **2873051** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	2.9	0.50	2.500	0.6300	92.0	73.3	111	0.685	20	
Nitrogen, Nitrite (As N)	3.9	0.50	5.000	0	77.6	75.5	113	2.32	20	
Nitrogen, Nitrate (As N)	12	0.50	12.50	0	92.1	86.8	110	2.75	20	
Sulfate	48	2.5	50.00	0	95.9	83.3	112	1.46	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **A81455**	RunNo: **81455**							
Prep Date:	Analysis Date: **9/21/2021**	SeqNo: **2877722**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **A81455**	RunNo: **81455**							
Prep Date:	Analysis Date: **9/21/2021**	SeqNo: **2877723**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.6	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62680** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **62680** RunNo: **81456**
Prep Date: **9/21/2021** Analysis Date: **9/21/2021** SeqNo: **2878161** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-62680** SampType: **MBLK** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW** Batch ID: **62680** RunNo: **81456**
Prep Date: **9/21/2021** Analysis Date: **9/21/2021** SeqNo: **2878162** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-62680** SampType: **LCS** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW** Batch ID: **62680** RunNo: **81456**
Prep Date: **9/21/2021** Analysis Date: **9/21/2021** SeqNo: **2878167** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.10	0.010	0.1000	0	102	70	130			

Sample ID: **LCSD-62680** SampType: **LCSD** TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02** Batch ID: **62680** RunNo: **81456**
Prep Date: **9/21/2021** Analysis Date: **9/21/2021** SeqNo: **2878168** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.087	0.010	0.1000	0	86.7	70	130	16.6	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62658** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **PBW** Batch ID: **62658** RunNo: **81460**
Prep Date: **9/17/2021** Analysis Date: **9/21/2021** SeqNo: **2878614** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.034	0.064								J
Motor Oil Range Organics (MRO)	ND	0.080								
Surr: DNOP	0.039		0.03750		105	15	142			

Sample ID: **LCS-62658** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSW** Batch ID: **62658** RunNo: **81460**
Prep Date: **9/17/2021** Analysis Date: **9/21/2021** SeqNo: **2878615** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.12	0.064	0.1875	0	61.3	21.1	126			
Surr: DNOP	0.020		0.01875		107	15	142			

Sample ID: **LCSD-62658** SampType: **LCSD** TestCode: **EPA Method 8015D Mod: Diesel Range**
Client ID: **LCSS02** Batch ID: **62658** RunNo: **81460**
Prep Date: **9/17/2021** Analysis Date: **9/21/2021** SeqNo: **2878616** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.11	0.064	0.1875	0	56.6	21.1	126	8.06	20	
Surr: DNOP	0.019		0.01875		101	15	142	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R81355**	RunNo: **81355**	
Prep Date:	Analysis Date: **9/16/2021**	SeqNo: **2873162**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81355**	RunNo: **81355**
Prep Date:	Analysis Date: **9/16/2021**	SeqNo: **2873162** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.0	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R81355**	RunNo: **81355**
Prep Date:	Analysis Date: **9/16/2021**	SeqNo: **2873163** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	26	1.0	20.00	0	128	70	130			
Toluene	22	1.0	20.00	0	109	70	130			
Chlorobenzene	21	1.0	20.00	0	106	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R81355**	RunNo: **81355**
Prep Date:	Analysis Date: **9/16/2021**	SeqNo: **2873163** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	22	1.0	20.00	0	109	70	130			
Trichloroethene (TCE)	23	1.0	20.00	0	116	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		110	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.4	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81384**	RunNo: **81384**
Prep Date:	Analysis Date: **9/17/2021**	SeqNo: **2874436** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81384**	RunNo: **81384**
Prep Date:	Analysis Date: **9/17/2021**	SeqNo: **2874436** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81384**	RunNo: **81384**
Prep Date:	Analysis Date: **9/17/2021**	SeqNo: **2874436** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	9.7		10.00		96.7	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81384**	RunNo: **81384**
Prep Date:	Analysis Date: **9/17/2021**	SeqNo: **2874437** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81384**	RunNo: **81384**
Prep Date:	Analysis Date: **9/17/2021**	SeqNo: **2874437** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		94.2	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.9		10.00		99.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R81384** RunNo: **81384**
Prep Date: Analysis Date: **9/17/2021** SeqNo: **2874438** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	26	1.0	20.00	0	128	70	130			
Toluene	22	1.0	20.00	0	111	70	130			
Chlorobenzene	24	1.0	20.00	0	118	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	108	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	112	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R81384** RunNo: **81384**
Prep Date: Analysis Date: **9/17/2021** SeqNo: **2874439** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	116	70	130			
Toluene	19	1.0	20.00	0	96.0	70	130			
Chlorobenzene	19	1.0	20.00	0	97.0	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	94.6	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	97.8	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		93.6	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	10		10.00		99.5	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R81542** RunNo: **81542**
Prep Date: Analysis Date: **9/23/2021** SeqNo: **2881350** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	25	1.0	20.00	0	123	70	130			
Toluene	20	1.0	20.00	0	100	70	130			
Chlorobenzene	21	1.0	20.00	0	103	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	102	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	98.3	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	11		10.00		105	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R81542**	RunNo: **81542**	
Prep Date:	Analysis Date: **9/23/2021**	SeqNo: **2881354**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R81542**	RunNo: **81542**
Prep Date:	Analysis Date: **9/23/2021**	SeqNo: **2881354** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.2	70	130			
Surr: Dibromofluoromethane	10		10.00		99.9	70	130			
Surr: Toluene-d8	9.7		10.00		96.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62647**	SampType: **MBLK**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **PBW**	Batch ID: **62647**		RunNo: **81474**		
Prep Date: **9/17/2021**	Analysis Date: **9/21/2021**		SeqNo: **2878364**	Units: **µg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aniline	ND	5.0								
Anthracene	ND	5.0								
Azobenzene	ND	5.0								
Benzoic acid	ND	20								
Benzyl alcohol	ND	5.0								
Bis(2-chloroethoxy)methane	ND	5.0								
Bis(2-chloroethyl)ether	ND	5.0								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	5.0								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
2-Chloronaphthalene	ND	5.0								
2-Chlorophenol	ND	5.0								
4-Chlorophenyl phenyl ether	ND	5.0								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
Dibenz(a,h)anthracene	ND	5.0								
Dibenzofuran	ND	5.0								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
3,3´-Dichlorobenzidine	ND	5.0								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	5.0								
4,6-Dinitro-2-methylphenol	ND	5.0								
2,4-Dinitrophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	5.0								
Hexachlorobenzene	ND	5.0								
Hexachlorobutadiene	ND	5.0								
Hexachlorocyclopentadiene	ND	5.0								
Hexachloroethane	ND	5.0								
Isophorone	ND	5.0								
2-Methylnaphthalene	ND	5.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **MB-62647** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW** Batch ID: **62647** RunNo: **81474**
Prep Date: **9/17/2021** Analysis Date: **9/21/2021** SeqNo: **2878364** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	5.0								
3+4-Methylphenol	ND	5.0								
N-Nitrosodi-n-propylamine	ND	5.0								
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	5.0								
2-Nitroaniline	ND	5.0								
3-Nitroaniline	ND	5.0								
4-Nitroaniline	ND	5.0								
Nitrobenzene	ND	5.0								
2-Nitrophenol	ND	5.0								
4-Nitrophenol	ND	5.0								
Pentachlorophenol	ND	20								
Phenol	ND	5.0								
Pyridine	ND	5.0								
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
Surr: 2-Fluorophenol	65		200.0		32.6	15	87			
Surr: Phenol-d5	72		200.0		36.2	15	67.5			
Surr: 2,4,6-Tribromophenol	32		200.0		15.9	15	122			
Surr: Nitrobenzene-d5	56		100.0		55.7	15	103			
Surr: 2-Fluorobiphenyl	53		100.0		53.3	15	103			
Surr: 4-Terphenyl-d14	95		100.0		95.4	45	137			

Sample ID: **LCS-62647** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **62647** RunNo: **81474**
Prep Date: **9/17/2021** Analysis Date: **9/21/2021** SeqNo: **2878365** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	110	5.0	200.0	0	54.0	28.3	103			
2-Chlorophenol	110	5.0	200.0	0	57.2	29.3	105			
1,4-Dichlorobenzene	49	5.0	100.0	0	49.0	15	87.6			
2,4-Dinitrotoluene	51	5.0	100.0	0	50.6	23.6	90.9			
N-Nitrosodi-n-propylamine	54	5.0	100.0	0	54.2	23.1	94.6			
4-Nitrophenol	98	5.0	200.0	0	49.1	15	77			
Pentachlorophenol	120	20	200.0	0	58.2	21	111			
Phenol	61	5.0	200.0	0	30.3	16.8	70.5			
1,2,4-Trichlorobenzene	47	5.0	100.0	0	47.5	15	88.2			
Surr: 2-Fluorophenol	87		200.0		43.6	15	84.2			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **LCS-62647** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **62647** RunNo: **81474**
Prep Date: **9/17/2021** Analysis Date: **9/21/2021** SeqNo: **2878365** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Phenol-d5	68		200.0		34.1	15	67.5			
Surr: 2,4,6-Tribromophenol	120		200.0		58.5	15	115			
Surr: Nitrobenzene-d5	53		100.0		52.7	15	103			
Surr: 2-Fluorobiphenyl	51		100.0		51.2	15	105			
Surr: 4-Terphenyl-d14	97		100.0		96.6	42.3	137			

Sample ID: **LCSD-62647** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **62647** RunNo: **81474**
Prep Date: **9/17/2021** Analysis Date: **9/21/2021** SeqNo: **2878366** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chloro-3-methylphenol	130	5.0	200.0	0	63.4	28.3	103	16.1	44.7	
2-Chlorophenol	130	5.0	200.0	0	62.6	29.3	105	9.00	35.6	
1,4-Dichlorobenzene	53	5.0	100.0	0	52.6	15	87.6	7.01	30.4	
2,4-Dinitrotoluene	54	5.0	100.0	0	53.8	23.6	90.9	6.24	53.1	
N-Nitrosodi-n-propylamine	59	5.0	100.0	0	59.2	23.1	94.6	8.86	31.1	
4-Nitrophenol	64	5.0	200.0	0	31.8	15	77	42.7	52.4	
Pentachlorophenol	62	20	200.0	0	30.9	21	111	61.4	71.6	
Phenol	67	5.0	200.0	0	33.5	16.8	70.5	10.1	37.2	
1,2,4-Trichlorobenzene	50	5.0	100.0	0	50.3	15	88.2	5.87	31.8	
Surr: 2-Fluorophenol	95		200.0		47.5	15	87	0	0	
Surr: Phenol-d5	76		200.0		38.1	15	67.5	0	0	
Surr: 2,4,6-Tribromophenol	120		200.0		59.0	15	122	0	0	
Surr: Nitrobenzene-d5	60		100.0		59.5	15	103	0	0	
Surr: 2-Fluorobiphenyl	57		100.0		57.2	15	103	0	0	
Surr: 4-Terphenyl-d14	99		100.0		99.3	45	137	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb-62617** SampType: **MBLK** TestCode: **EPA Method 8270SIM**
Client ID: **PBW** Batch ID: **62617** RunNo: **81570**
Prep Date: **9/16/2021** Analysis Date: **9/24/2021** SeqNo: **2882482** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	1.0								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.10								
2-Methylnaphthalene	ND	0.10								
Acenaphthylene	ND	0.10								
Acenaphthene	ND	0.10								
Fluorene	ND	0.10								
Phenanthrene	ND	0.10								
Anthracene	ND	0.10								
Fluoranthene	ND	0.20								
Pyrene	ND	0.20								
Benz(a)anthracene	ND	0.10								
Chrysene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.10								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.10								
Benzo(g,h,i)perylene	ND	0.10								
Indeno(1,2,3-cd)pyrene	ND	0.30								
Surr: Nitrobenzene-d5	2.0		4.000		50.0	21.9	89.8			
Surr: 2,4,6-Tribromophenol	3.1		8.000		39.2	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.9		4.000		46.5	15	84.5			
Surr: 4-Terphenyl-d14	4.0		4.000		99.0	73.1	152			

Sample ID: **lcs-62617** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **62617** RunNo: **81570**
Prep Date: **9/16/2021** Analysis Date: **9/24/2021** SeqNo: **2882484** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.60	0.10	2.000	0	30.0	15	79.8			
Naphthalene	0.82	0.10	2.000	0	41.0	26.5	90.9			
1-Methylnaphthalene	0.84	0.10	2.000	0	42.0	27.9	88.2			
2-Methylnaphthalene	0.82	0.10	2.000	0	41.0	29.2	87.5			
Acenaphthylene	0.96	0.10	2.000	0	48.0	30	92.9			
Acenaphthene	0.96	0.10	2.000	0	48.0	25.6	93.9			
Fluorene	0.94	0.10	2.000	0	47.0	27.4	95.1			
Phenanthrene	1.1	0.10	2.000	0	56.0	25.1	104			
Anthracene	1.1	0.10	2.000	0	53.0	30.1	100			
Fluoranthene	1.4	0.20	2.000	0	71.0	41.6	126			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **lcs-62617** SampType: **LCS** TestCode: **EPA Method 8270SIM**
Client ID: **LCSW** Batch ID: **62617** RunNo: **81570**
Prep Date: **9/16/2021** Analysis Date: **9/24/2021** SeqNo: **2882484** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Pyrene	1.3	0.20	2.000	0	67.0	34.5	112			
Benz(a)anthracene	1.6	0.10	2.000	0	78.0	43.9	132			
Chrysene	1.6	0.10	2.000	0	79.0	39.8	118			
Benzo(b)fluoranthene	1.5	0.10	2.000	0	77.0	37.2	134			
Benzo(k)fluoranthene	1.6	0.10	2.000	0	79.0	43.8	122			
Benzo(a)pyrene	1.5	0.070	2.000	0	74.0	36.6	122			
Dibenz(a,h)anthracene	1.5	0.10	2.000	0	75.0	35.5	129			
Benzo(g,h,i)perylene	1.5	0.10	2.000	0	76.0	39.4	120			
Indeno(1,2,3-cd)pyrene	1.6	0.30	2.000	0	82.0	24.9	150			
Surr: Nitrobenzene-d5	2.5		5.000		49.6	21.9	89.8			
Surr: 2,4,6-Tribromophenol	3.8		10.00		38.2	23.4	71.6			
Surr: 2-Fluorobiphenyl	1.8		5.000		35.6	15	84.5			
Surr: 4-Terphenyl-d14	5.1		5.000		102	73.1	152			

Sample ID: **lcsd-62617** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **62617** RunNo: **81570**
Prep Date: **9/16/2021** Analysis Date: **9/24/2021** SeqNo: **2882486** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	0.64	0.10	2.000	0	32.0	15	79.8	6.45	34.2	
Naphthalene	0.88	0.10	2.000	0	44.0	26.5	90.9	7.06	37.6	
1-Methylnaphthalene	0.92	0.10	2.000	0	46.0	27.9	88.2	9.09	33.1	
2-Methylnaphthalene	0.90	0.10	2.000	0	45.0	29.2	87.5	9.30	35.4	
Acenaphthylene	1.1	0.10	2.000	0	54.0	30	92.9	11.8	31.7	
Acenaphthene	1.1	0.10	2.000	0	54.0	25.6	93.9	11.8	36.3	
Fluorene	1.1	0.10	2.000	0	55.0	27.4	95.1	15.7	32.2	
Phenanthrene	1.3	0.10	2.000	0	63.0	25.1	104	11.8	32.9	
Anthracene	1.2	0.10	2.000	0	61.0	30.1	100	14.0	31.5	
Fluoranthene	1.6	0.20	2.000	0	81.0	41.6	126	13.2	26.5	
Pyrene	1.4	0.20	2.000	0	72.0	34.5	112	7.19	23.3	
Benz(a)anthracene	1.6	0.10	2.000	0	79.0	43.9	132	1.27	29.5	
Chrysene	1.6	0.10	2.000	0	80.0	39.8	118	1.26	22.3	
Benzo(b)fluoranthene	1.6	0.10	2.000	0	78.0	37.2	134	1.29	25.2	
Benzo(k)fluoranthene	1.6	0.10	2.000	0	81.0	43.8	122	2.50	23.1	
Benzo(a)pyrene	1.5	0.070	2.000	0	75.0	36.6	122	1.34	22.4	
Dibenz(a,h)anthracene	1.5	0.10	2.000	0	76.0	35.5	129	1.32	23.7	
Benzo(g,h,i)perylene	1.5	0.10	2.000	0	77.0	39.4	120	1.31	22.9	
Indeno(1,2,3-cd)pyrene	1.7	0.30	2.000	0	83.0	24.9	150	1.21	26.6	
Surr: Nitrobenzene-d5	2.9		5.000		58.4	21.9	89.8	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **lcsd-62617** SampType: **LCSD** TestCode: **EPA Method 8270SIM**
Client ID: **LCSS02** Batch ID: **62617** RunNo: **81570**
Prep Date: **9/16/2021** Analysis Date: **9/24/2021** SeqNo: **2882486** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	4.1		10.00		40.8	23.4	71.6	0	0	
Surr: 2-Fluorobiphenyl	2.0		5.000		40.8	15	84.5	0	0	
Surr: 4-Terphenyl-d14	5.4		5.000		108	73.1	152	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **R81355** RunNo: **81355**
Prep Date: Analysis Date: **9/16/2021** SeqNo: **2873218** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	88.2	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		95.5	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **R81355** RunNo: **81355**
Prep Date: Analysis Date: **9/16/2021** SeqNo: **2873219** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **R81384** RunNo: **81384**
Prep Date: Analysis Date: **9/17/2021** SeqNo: **2874473** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **R81384** RunNo: **81384**
Prep Date: Analysis Date: **9/17/2021** SeqNo: **2874474** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	87.5	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.8	70	130			

Sample ID: **2.5ug gro lcs1** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **R81542** RunNo: **81542**
Prep Date: Analysis Date: **9/23/2021** SeqNo: **2881464** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.43	0.050	0.5000	0	85.8	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **R81542** RunNo: **81542**
Prep Date: Analysis Date: **9/23/2021** SeqNo: **2881466** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109786**
03-Nov-21

Client: Marathon
Project: 2021 GW Sampling 3rd Quarter

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R81542**	RunNo: **81542**
Prep Date:	Analysis Date: **9/23/2021**	SeqNo: **2881466** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: 4-Bromofluorobenzene	9.8		10.00		97.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Marathon** Work Order Number: **2109786** RcptNo: 1

Received By: **Scott Anderson** 9/15/2021 3:45:00 PM SPL

Completed By: **Desiree Dominguez** 9/15/2021 3:49:20 PM DD

Reviewed By: SGL 9/15/21

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Client

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
   Samples were collected the same day and chilled.
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 24 (<2 or >12 unless noted)
Adjusted? NO
Checked by: SGL 9/15/21 TMC 9/15/21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	11.6	Good	Yes			
2	10.2	Good	Yes			
3	11.9	Good	Yes			
4	11.5	Good	Yes			

Released to Imaging: 11/23/2022 10:32:25 AM

Received by OCD: 3/25/2022 3:35:30 PM

Chain of Custody Record

Client: Marathon Petroleum Company

Mailing Address: 92 Giant Crossing Rd.
Jamestown, NM 87347

Phone #: 808-640-1823

Email or Fax#: bmcloughlin@trihydro.com

QA/QC Package:
Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
NELAC ☐ Other_____

EDD (Type) _____

☒ **Standard** ☐ Rush_____

Project Name:
2021 GW Sampling - 3rd Quarter

Project #: 697-080-001

PO#: 4500267009

Project Manager:
Lesli Alexander
Brian McLoughlin

Sampler:

On Ice: ☒ Yes ☐ No

# of Coolers: 4

Cooler Temp(including CF): See Remarks

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2109786	VOCs	TPH GRO	TPH DRO/MRO	SVOC includes 1,4 Dioxane on reques	1,4 Dioxane	WQCC metals	C/A	NO2/NO3 combined	Nitrite	8011 EDB	8260/BTEX/MTBE	COD	Cyanide	TDS/TSS	Gen Chem	PFAS
9-15-21	8:30	water	EB-09-15-21	2		-001	X	X	X	X		X	X			X						
9-15-21	8:30	water	MKTF-10	2		-002	X	X	X	X		X	X									
9-15-21	9:00	water	MKTF-11	2		-003	X	X	X	X		X	X									
9-15-21	9:15	water	MKTF-27	4		-004	X	X	X	X		X	X			X						
9-15-21	10:00	water	MKTF-28	2		-005	X	X	X	X		X	X									
9-15-21	10:25	water	MKTF-29	2		-006	X	X	X	X		X	X									
9-15-21	10:45	water	MKTF-30	4		-007	X	X	X	X		X	X			X						
9-15-21	10:45	water	FB-09-15-21	2		-008	X															
9-15-21	—	water	DUP-09-15-21	4		-009	X	X	X	X		X	X			X						
		water	Trip Blank DAD 9/15/21			-010																
		water																				
		water																				

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
9-15-21	1:30			courier	9/15/21	15:45
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks: MKTF-10 Gauge did not pick up product but strong odor of gasoline.
① 11.8 - 0.2 = 11.6°c
② 10.4 - 0.2 = 10.2°c
③ 12.1 - 0.2 = 11.9°c
④ 11.7 - 0.2 = 11.5°c DAD 9/15/21

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Appendix B – Data Validation Reports

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-002 Task: 0006	Sample Start Date: 06/23/2021
Date Validated: 02/17/2022	Sample End Date: 06/23/2021
Parameters Included: ▪ Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B ▪ 1,2-Dibromoethane (EDB) by EPA Method 504.1 ▪ Semivolatile Organic Compounds (SVOC) by SW-846 Method 8270C and Method 8270C with Selected Ion Monitoring (SIM) ▪ Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D ▪ TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified ▪ Total and Dissolved Metals by EPA Method 200.7 and Method 200.8 ▪ Total and Dissolved Mercury by EPA Method 245.1 ▪ Anions by EPA Method 300.0	
Laboratory Project ID: 2106C55	
Data Validator: Daran O'Hollearn, Lead Project Scientist	
Reviewer: Mike Phillips, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Equipment blanks
- Trip blanks

Tier II Data Validation Report Summary

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
MKTF-10	2106C55-001
NAPIS-1	2106C55-002
OW-58A	2106C55-003
OW-58	2106C55-004
OW-57	2106C55-005
MKTF-38	2106C55-006
MKTF-18	2106C55-007
MKTF-36	2106C55-008
MKTF-35	2106C55-009
EB 6/23/2021	2106C55-011
DUP 6/23/2021	2106C55-012
Trip Blank	2106C55-013

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ○ Initial and Continuing Calibrations (Items 9 and 10)
- ⊗ Laboratory Blanks (Items 11 and 12)
- ⊗ MS/MSD (Items 13 and 14)
- ⊗ LCS/LCSD (Items 15 and 16)
- ✓ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Equipment and Trip Blanks (Items 18 and 19)
- ⊗ Field Duplicates (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)
- ⊗ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
J+	The result is an estimated concentration, but may be biased high
J-	The result is an estimated concentration, but may be biased low
UJ	Estimated reporting limit
U	Evaluated to be undetected at the reporting limit
JB	Estimated concentration due to blank contamination

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 1,609 data points. The data completeness calculation does not include any submitted blank sample results. No data points were rejected. The data completeness measure for this data package is calculated to be 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST

1. Was the report free of non-conformances identified by the laboratory? Yes

Comments: The laboratory did not report non-conformances related to the analytical data for this sample set.

2. Were the data free of data qualification flags and/or notes used by the laboratory? No
If no, define.

Comments: The laboratory used the following data qualification flags with this data set.

D – Sample diluted due to matrix.

E – Value above quantitation range. *This laboratory flag was applied only to QC sample results in the laboratory report, and qualification of sample data was not required.*

J – Analyte detected below quantitation limits.

S – % Recovery outside of range due to dilution or matrix interference.

* – Value exceeds maximum contaminant level.

3. Were sample CoC forms and custody procedures complete? Yes

Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.

4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable? Yes

Comments: The detection limits appeared to be acceptable. The following dilutions were applied.

Method	Sample(s)	Analyte(s)	Dilution Factor
8015D	OW-58	TPH DRO and MRO	2
200.7	Multiple Samples	Select Dissolved and Total Metals	5
200.8	MKTF-10, OW-58A	Dissolved Lead and Thallium	5
245.1	OW-58A	Dissolved Mercury	5
300.0	Multiple Samples	Select Anions	5
8015D	NAPIS-1, MKTF-18	TPH GRO	5
8260B	NAPIS-1	MTBE	5
8260B	MKTF-18	VOCs	5
200.7	Multiple Samples	Select Dissolved and Total Metals	10
8015D	MKTF-10, MKTF-35	TPH GRO	10
8015D	OW-57	TPH DRO and MRO	10
8260B	MKTF-10, MKTF-35	VOCs	10
200.7	OW-58	Dissolved Iron	20
200.7	MKTF-36	Dissolved and Total Iron and Barium	20
300.0	MKTF-38	Sulfate	20
300.0	Multiple Samples	Chloride	20
8015D	MKTF-36	TPH DRO and MRO	20
8270C	Multiple Samples	Select SVOCs	20
200.7	MKTF-35, DUP 6/23/2021	Total Aluminum and Iron	50
300.0	MKTF-35, DUP 6/23/2021	Chloride	50
8015D	Multiple Samples	TPH GRO	50
8260B	Multiple Samples	Select VOCs	50

VALIDATION CRITERIA CHECKLIST

Method	Sample(s)	Analyte(s)	Dilution Factor
300.0	MKTF-10	Chloride	100
8015D	OW-58	TPH GRO	100
8260B	MKTF-10, OW-58, MKTF-35	Select VOCs	100
8260B	MKTF-36	Toluene	500
8260B	Multiple Samples	Benzene	500
8260B	OW-58	Benzene	1,000

5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC? Yes

Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.

6. Were samples received in good condition within method-specified requirements? No

Comments: Samples were received on ice, in good condition, and with the cooler temperatures outside the recommended temperature range of 4°C ± 2°C between 6.7°C and 12.2°C as noted on the CoC and Sample Log-in Check List.

The cooler temperatures above 6°C were evaluated to be acceptable since the samples were received at the laboratory on the same day (within 24 hours) of the last sample collection time, and temperature equilibrium had not been established.

7. Were samples extracted/digested and analyzed within method-specified or technical holding times? Yes

Comments: The samples were extracted/digested and analyzed within method-specific holding times.

8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil. Yes

Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.

9. Did the laboratory provide any specific initial and/or continuing calibration results? No

Comments: Initial and continuing calibration data were not included as part of this data set.

10. If initial and/or continuing calibration results were provided, were the results within acceptable limits? N/A

Comments: Initial and continuing calibration data were not included as part of this data set.

11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.

VALIDATION CRITERIA CHECKLIST

12. Were target analytes reported as not detected in the laboratory blanks? No

Comments: Target analytes were reported as not detected in the laboratory blanks, with the following exceptions.

Method	Analyte	Batch	Concentration
8015D	**TPH DRO**	**60947**	**0.049 mg/L**
8015D	TPH DRO	60941	0.038 mg/L
8270C	**Bis(2-ethylhexyl)phthalate**	**60957**	**5.0 µg/L**

Detections of bis(2-ethylhexyl)phthalate and TPH DRO in the associated samples that were less than the blank results and/or less than the applicable reporting limits were assigned U qualifiers. Detections of TPH DRO in the associated samples that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batches. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
200.7	Total Metals	61019	NAPIS-1, OW-58A
200.7	Dissolved Metals	A79403	Not Prepared
200.7	Dissolved Metals	B79403	EB 6/23/2021
200.8	Total Metals	61019	MKTF-10
200.8	Dissolved Metals	B79527	Not Prepared
245.1	Total Mercury	61000	Not Prepared
245.1	Dissolved Mercury	61150	OW-58A
300.0	Anions	R79334	EB 6/23/2021
300.0	Chloride	R79574	Not Prepared
300.0	Chloride	R79589	Not Prepared
504.1	EDB	60990	Not Prepared
8015D	DRO and MRO	60941	Not Prepared
8015D	DRO and MRO	60947	Not Prepared
8015D	GRO	G79445	MKTF-35
8015D	GRO	GW79410	Not Prepared
8260B	VOCs	A79429	Not Prepared
8260B	VOCs	B79410	Not Prepared
8260B	VOCs	R79445	MKTF-35
8260B	Benzene	R79505	Not Prepared
8270 SIM	SVOCs	60905	Not Prepared
8270C	SVOCs	60957	Not Prepared

Not Prepared – Matrix spikes were not prepared for this batch.

VALIDATION CRITERIA CHECKLIST

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? No

Comments: The percent recoveries and RPDs for MS/MSDs prepared from project samples were within data validation and laboratory QC limits or were not applicable because the unspiked amount was more than four times the spike added, with the following exceptions.

Method	Analyte	Batch	MS Recovery	MSD Recovery	MS/MSD QC Limits
200.7	**Total Aluminum**	**61019**	**133%**	**130%**	**75-125%**
200.8	**Total Arsenic**	**61019**	**126%**	**-----**	**75-125%**

Detections of total aluminum and total arsenic in the associated samples were assigned J+ qualifiers due to evidence of potential high bias. Non-detections of these analytes in the associated samples did not require qualification.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? No

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits, with the following exception.

The LCS recoveries for dissolved nickel in Method 200.7 batches A79403 and B79403 were outside the data validation acceptance limits of 70-130% at 56.0% and 61.1%, respectively. Detections of dissolved nickel in the associated samples in these batches were assigned J- qualifiers due to evidence of potential low bias. Non-detect results were assigned UJ qualifiers.

17. Were surrogate recoveries within laboratory QC limits? No

Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions.

Since Method 8270C surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes in a given fraction (acid or base/neutral) when two or more surrogates from the same fraction (acid or base/neutral) were outside the acceptance range. This condition did not exist for the samples MKTF-10, NAPIS-1, and MKTF-36, and qualification of sample data was not required.

Since Method 8270 SIM surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes in a given fraction (acid or base/neutral) when two or more surrogates from the same fraction (acid or base/neutral) were outside the acceptance range. This condition did not exist for the sample MKTF-36, and qualification of sample data was not required.

The TPH DRO and TPH MRO results for samples OW-57 and MKTF-36 were not qualified based on the surrogate non-conformances in the Method 8015D Modified analyses since the applied dilutions of 10 and 20 times, respectively, for these samples resulted in surrogate concentrations below routinely calibrated levels, and those results were deemed unreliable and possibly inaccurate.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One trip blank sample, Trip Blank, and one equipment blank sample, EB-6/23/2021, were collected as part of this sample set.

VALIDATION CRITERIA CHECKLIST

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
Trip Blank	**8260B**	**Benzene**	**0.36 µg/L**
EB 6/23/2021	**200.7**	**Dissolved Zinc**	**0.0091 mg/L**
EB 6/23/2021	**300.0**	**Nitrate as N**	**0.043 mg/L**
EB 6/23/2021	8015D	TPH DRO	0.024 mg/L
EB 6/23/2021	**8015D**	**TPH GRO**	**0.030 mg/L**
EB 6/23/2021	**8260B**	**1,2,4-Trimethylbenzene**	**0.24 µg/L**
EB 6/23/2021	**8260B**	**1,4-Dichlorobenzene**	**0.27 µg/L**
EB 6/23/2021	**8260B**	**2-Butanone**	**1.8 µg/L**
EB 6/23/2021	**8260B**	**Acetone**	**7.8 µg/L**
EB 6/23/2021	8260B	Benzene	0.82 µg/L
EB 6/23/2021	8260B	Bromodichloromethane	0.22 µg/L
EB 6/23/2021	**8260B**	**Ethylbenzene**	**0.35 µg/L**
EB 6/23/2021	**8260B**	**Naphthalene**	**0.31 µg/L**
EB 6/23/2021	8260B	Styrene	0.30 µg/L
EB 6/23/2021	**8260B**	**Toluene**	**0.97 µg/L**
EB 6/23/2021	**8260B**	**Total Xylenes**	**0.56 µg/L**
EB 6/23/2021	8270C	Bis(2-ethylhexyl)phthalate	4.8 µg/L

Detections of the identified analytes in the associated samples that were less than the blank results and/or less than the applicable reporting limits were assigned U qualifiers. Detections of the identified analytes in the associated samples that were greater than the reporting limits but less than 10 times the blank results were assigned JB qualifiers. Non-detections of the identified analytes in the associated samples and detections that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

The DRO results for the samples in batch 60947 and the bis(2-ethylhexyl)phthalate results for the samples in batch 60957 were previously qualified due to laboratory blank contamination; therefore, additional qualification due to the equipment blank contamination was not required.

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample DUP 6/23/2021 was collected as a field duplicate of sample MKTF-35.

VALIDATION CRITERIA CHECKLIST

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? No

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples, with the following exceptions.

RPD values could not be calculated for dissolved aluminum and nitrate as N for the field duplicate pair MKTF-35 and DUP 6/23/2021 since the analytes were detected in the duplicate sample and were undetected in the parent sample. As the detections in the duplicate sample were greater than two times the reporting limits, dissolved aluminum and nitrate as N were qualified as J and UJ for the duplicate and parent samples, respectively.

The RPD values for multiple analytes exceeded the data validation limit of 30%, which was evidence of poor precision. These analyte results were qualified as J for samples MKTF-35 and DUP 6/23/2021.

The RPD value for dissolved iron greatly exceeded the data validation limit of 30% at 196.3%. The dissolved iron results were qualified as J for the parent and duplicate samples, MKTF-35 and DUP 6/23/2021, as well as the remaining associated samples based on evidence of extremely poor precision (RPD > 100%). The non-detected dissolved iron result in sample EB 6/23/2021 was qualified as UJ.

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? N/A

Comments: Laboratory duplicate samples were not prepared for this sample set.

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? No

Comments: Target analytes were not reported by more than one method in this data set, with the following exceptions.

Target analytes 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1-methylnaphthalene, 2-methylnaphthalene, hexachlorobutadiene, and naphthalene were reported by both Method 8260B and Method 8270C. 1,2-Dibromoethane was reported from analyses by both Method 8260B and Method 504.1. These analytes were reported as not detected by both methods, or one or both results were within 5 times the applicable reporting limit, with the following exceptions.

Naphthalene was detected by both Method 8260B and Method 8270C in samples MKTF-10 and MKTF-36 at concentrations greater than 5 times the applicable reporting limits. The differences were not within the variability of the analytical methods, with RPD values of 50.0% and 43.8%, respectively. The naphthalene results for these samples were assigned J qualifiers based to the inconsistencies between the analytical findings.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
OW-58	Antimony	ND	0.00046	0.0010 / 0.0010	mg/L	----- ♦
OW-58A	Antimony	ND	0.00046	0.0010 / 0.0010	mg/L	----- ♦
OW-58A	Arsenic	0.0043	0.0044	0.0010 / 0.0010	mg/L	2.3%
OW-58	Barium	4.5	4.6	0.030 / 0.010	mg/L	2.2%
MKTF-36	Barium	7.4	7.5	0.060 / 0.040	mg/L	1.3%
NAPIS-1	Boron	0.77	0.83	0.20 / 0.040	mg/L	7.5%
OW-58A	Boron	0.47	0.49	0.040 / 0.040	mg/L	4.2%
MKTF-35	Boron	0.33	0.34	0.040 / 0.040	mg/L	3.0%

VALIDATION CRITERIA CHECKLIST

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
MKTF-10	Iron	9.5	9.7	0.50 / 0.20	mg/L	2.1%
MKTF-10	Manganese	5.7	5.9	0.020 / 0.020	mg/L	3.4%
OW-58A	Manganese	1.2	1.3	0.010 / 0.010	mg/L	8.0%
OW-58A	Nickel	0.030	0.031	0.010 / 0.010	mg/L	3.3%
MKTF-36	Nickel	0.0048	0.0054	0.010 / 0.010	mg/L	11.8% ♦
MKTF-10	Silver	ND	0.0015	0.0050 / 0.0050	mg/L	----- ♦
MKTF-10	Zinc	ND	0.0068	0.010 / 0.010	mg/L	----- ♦
NAPIS-1	Zinc	ND	0.020	0.010 / 0.010	mg/L	----- ♦
OW-58A	Zinc	ND	0.013	0.010 / 0.010	mg/L	----- ♦
OW-57	Zinc	0.0070	0.015	0.010 / 0.010	mg/L	72.7% ♦
MKTF-38	Zinc	ND	0.011	0.010 / 0.010	mg/L	----- ♦
MKTF-18	Zinc	ND	0.0080	0.010 / 0.010	mg/L	----- ♦
MKTF-36	Zinc	ND	0.0084	0.010 / 0.010	mg/L	----- ♦
EB 6/23/2021	Zinc	ND	0.0091	0.010 / 0.010	mg/L	----- ♦

----- *RPD could not be calculated.*

♦ *= One or both of the detections were less than 2 times the applicable reporting limits, and qualification of data was not required.*

The differences for the corresponding analytical results were within five times the applicable reporting limits, and validation action was not required, or the differences between the results were less than 30% indicating that the data were within the measurement uncertainty for the methods, and qualification of results was not required based on the analytical inconsistencies.

FIELD DUPLICATE SUMMARY

Client Sample ID: MKTF-35 Field Duplicate Sample ID: DUP 6/23/2021				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Aluminum, Dissolved	**E 200.7**	**ND (0.020 mg/L)**	**0.19 mg/L**	**DL**
Aluminum, Total	E 200.7	20 mg/L	27 mg/L	29.8%
Barium, Dissolved	E 200.7	2.6 mg/L	2.7 mg/L	3.8%
Barium, Total	E 200.7	4.1 mg/L	5.5 mg/L	29.2%
Boron, Dissolved	E 200.7	0.34 mg/L	0.33 mg/L	3.0%
Boron, Total	E 200.7	0.33 mg/L	0.34 mg/L	3.0%
Calcium, Total	E 200.7	240 mg/L	290 mg/L	18.9%
Chromium, Total	E 200.7	0.0088 mg/L	0.010 mg/L	12.8% +/-RL
Cobalt, Dissolved	E 200.7	ND (0.0060 mg/L)	0.0026 mg/L	DL
Cobalt, Total	E 200.7	0.011 mg/L	0.014 mg/L	24.0%
Copper, Total	**E 200.7**	**0.0084 mg/L**	**0.013 mg/L**	**43.0%**
Iron, Dissolved	**E 200.7**	**0.049 mg/L**	**5.2 mg/L**	**196.3%**
Iron, Total	E 200.7	14 mg/L	17 mg/L	19.4%
Magnesium, Total	E 200.7	67 mg/L	74 mg/L	9.9%
Manganese, Dissolved	E 200.7	3.1 mg/L	3.2 mg/L	3.2%
Manganese, Total	E 200.7	4.5 mg/L	5.5 mg/L	20.0%
Nickel, Total	E 200.7	0.0096 mg/L	0.014 mg/L	37.3% +/-RL
Potassium, Total	E 200.7	2.4 mg/L	2.6 mg/L	8.0%
Sodium, Total	E 200.7	250 mg/L	250 mg/L	0.0%
Zinc, Dissolved	E 200.7	0.0061 mg/L	0.0072 mg/L	16.5% +/-RL
Zinc, Total	**E 200.7**	**0.017 mg/L**	**0.024 mg/L**	**34.1%**
Arsenic, Dissolved	E200.8	0.00027 mg/L	0.00056 mg/L	69.9% +/-RL
Arsenic, Total	E200.8	0.0038 mg/L	0.0050 mg/L	27.3%
Lead, Dissolved	E200.8	0.00021 mg/L	0.00055 mg/L	89.5% +/-RL
Lead, Total	**E200.8**	**0.010 mg/L**	**0.015 mg/L**	**40.0%**
Selenium, Total	**E200.8**	**0.0015 mg/L**	**0.0025 mg/L**	**50.0%**
Bromide	E300	0.87 mg/L	0.88 mg/L	1.1%
Chloride	E300	390 mg/L	360 mg/L	8.0%
Fluoride, Total	E300	0.70 mg/L	0.64 mg/L	9.0%
Nitrogen, Nitrate	**E300**	**ND (0.50 mg/L)**	**0.30 mg/L**	**DL**
Sulfate	E300	ND (2.5) mg/L)	0.37 mg/L	DL
TPH DRO	SW8015	1.4 mg/L	1.3 mg/L	7.4%
TPH GRO	SW8015	14 mg/L	17 mg/L	19.4%
1,2,4-Trimethylbenzene	SW8260B	250 µg/L	280 µg/L	11.3%
1,3,5-Trimethylbenzene	SW8260B	8.6 µg/L	ND (50 µg/L)	DL
1,4-Dichlorobenzene	SW8260B	4.3 µg/L	ND (50 µg/L)	DL
2-Butanone	SW8260B	ND (100 µg/L)	160 µg/L	DL
2-Methylnaphthalene	SW8260B	7.0 µg/L	ND (200 µg/L)	DL
Acetone	SW8260B	ND (100 µg/L)	280 µg/L	DL
Benzene	SW8260B	5,400 µg/L	5,100 µg/L	5.7%
Chloromethane	SW8260B	ND (30 µg/L)	50 µg/L	DL
Ethylbenzene	SW8260B	590 µg/L	630 µg/L	6.6%

Analyte	Method	Laboratory Result	Duplicate Result	Relative Percent Difference (RPD)
Isopropylbenzene	SW8260B	22 µg/L	23 µg/L	4.4%
MTBE	SW8260B	180 µg/L	190 µg/L	5.4%
Naphthalene	SW8260B	61 µg/L	70 µg/L	13.7%
n-Butylbenzene	SW8260B	3.0 µg/L	ND (150 µg/L)	DL
n-Propylbenzene	SW8260B	57 µg/L	64 µg/L	11.6%
Toluene	SW8260B	170 µg/L	140 µg/L	19.4%
Xylenes, Total	SW8260B	700 µg/L	740 µg/L	5.6%
1,4-Dichlorobenzene	SW8270C	1.9 µg/L	1.7 µg/L	11.1% +/-RL
1-Methylnaphthalene	SW8270C	4.8 µg/L	5.2 µg/L	8.0%
2,4-Dimethylphenol	SW8270C	5.8 µg/L	5.8 µg/L	0.0% +/-RL
2-Methylnaphthalene	SW8270C	5.2 µg/L	5.7 µg/L	9.2%
2-Methylphenol	SW8270C	1.7 µg/L	1.6 µg/L	6.1% +/-RL
Acenaphthene	SW8270C	1.8 µg/L	1.9 µg/L	5.4%
Anthracene	SW8270C	0.4 µg/L	0.42 µg/L	4.9%
Bis(2-ethylhexyl)phthalate	SW8270C	5.5 µg/L	4.9 µg/L	11.5% +/-RL
Carbazole	SW8270C	4.0 µg/L	4.0 µg/L	0.0% +/-RL
Dibenzofuran	SW8270C	3.4 µg/L	3.2 µg/L	6.1% +/-RL
Fluoranthene	SW8270C	0.26 µg/L	ND (0.20 µg/L)	DL
Fluorene	SW8270C	0.38 µg/L	0.40 µg/L	5.1%
Naphthalene	SW8270C	35 µg/L	37 µg/L	5.6%
Phenanthrene	**SW8270C**	**0.28 µg/L**	**0.18 µg/L**	**43.5%**
Phenol	SW8270C	54 µg/L	51 µg/L	5.7%
Pyrene	SW8270C	0.30 µg/L	0.32 µg/L	6.5% +/-RL

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

RPD values could not be calculated for dissolved aluminum and nitrate as N for the field duplicate pair MKTF-35 and DUP 6/23/2021 since the analytes were detected in the duplicate sample and were undetected in the parent sample. As the detections in the duplicate sample were greater than two times the reporting limits, dissolved aluminum and nitrate as N were qualified as J and UJ for the duplicate and parent samples, respectively.

The RPD values for multiple analytes exceeded the data validation limit of 30%, which was evidence of poor precision. These analyte results were qualified as J for samples MKTF-35 and DUP 6/23/2021.

The RPD value for dissolved iron greatly exceeded the data validation limit of 30% at 196.3%. The dissolved iron results were qualified as J for the parent and duplicate samples, MKTF-35 and DUP 6/23/2021, as well as the remaining associated samples based on evidence of extremely poor precision (RPD > 100%). The non-detect dissolved iron result in sample EB 6/23/2021 was qualified as UJ.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
LR-LCS	The LCS and/or LCSD percent recovery was less than the lower acceptable limit indicating a possible low bias.
HR-MS	The MS and/or MSD percent recovery was greater than the upper acceptable limit indicating possible matrix interference.
MBD	Method blank detection
TBD	Trip blank detection
EBD	Equipment blank detection
ERPD-FD	High field duplicate RPD.
DATA-COMP	Analytical results for analyte by different methods did not meet comparability limits.
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,1,2,2-Tetrachloroethane	SW8260B	MKTF-18	2106c55-007a	4.8	10	µg/L	J	MDLRL
1,1-Dichloroethene	SW8260B	MKTF-10	2106c55-001a	4.7	10	µg/L	J	MDLRL
1,2,4-Trimethylbenzene	SW8260B	OW-58	2106c55-004a	14	100	µg/L	U	EBD, MDLRL
1,2,4-Trimethylbenzene	SW8260B	EB 6/23/2021	2106c55-011a	0.24	1.0	µg/L	J	MDLRL
1,3,5-Trimethylbenzene	SW8260B	OW-58A	2106c55-003a	46	50	µg/L	J	MDLRL
1,3,5-Trimethylbenzene	SW8260B	MKTF-35	2106c55-009a	8.6	10	µg/L	J	MDLRL
1,4-Dichlorobenzene	SW8260B	MKTF-35	2106c55-009a	4.3	10	µg/L	U	EBD, MDLRL
1,4-Dichlorobenzene	SW8270C	MKTF-35	2106C55-009D	1.9	5.0	µg/L	J	MDLRL
1,4-Dichlorobenzene	SW8260B	EB 6/23/2021	2106c55-011a	0.27	1.0	µg/L	J	MDLRL
1,4-Dichlorobenzene	SW8270C	DUP 6/23/2021	2106C55-012D	1.7	5.0	µg/L	J	MDLRL
1,4-Dioxane	SW8270C	MKTF-38	2106c55-006c	0.52	1.0	µg/L	J	MDLRL
1,4-Dioxane	SW8270C	MKTF-36	2106c55-008d	4.4	10	µg/L	J	MDLRL
1-Methylnaphthalene	SW8260B	OW-58A	2106c55-003a	120	200	µg/L	J	MDLRL
1-Methylnaphthalene	SW8260B	OW-57	2106c55-005a	99	200	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
2,4-Dimethylphenol	SW8270C	MKTF-18	2106C55-007D	2.6	5.0	µg/L	J	MDLRL
2-Butanone	SW8260B	OW-58A	2106c55-003a	290	500	µg/L	U	EBD, MDLRL
2-Butanone	SW8260B	OW-57	2106c55-005a	91	500	µg/L	U	EBD, MDLRL
2-Butanone	SW8260B	MKTF-18	2106c55-007a	13	50	µg/L	U	EBD, MDLRL
2-Butanone	SW8260B	MKTF-36	2106c55-008a	250	500	µg/L	U	EBD, MDLRL
2-Butanone	SW8260B	DUP 6/23/2021	2106c55-012a	160	500	µg/L	U	EBD, MDLRL
2-Butanone	SW8260B	EB 6/23/2021	2106c55-011a	1.8	10	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	OW-58A	2106c55-003a	120	200	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	OW-57	2106c55-005a	69	200	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	MKTF-35	2106c55-009a	ND	40	µg/L	J	MDLRL
2-Methylphenol	SW8270C	MKTF-35	2106C55-009D	1.7	5.0	µg/L	J	MDLRL
2-Methylphenol	SW8270C	DUP 6/23/2021	2106C55-012D	1.6	5.0	µg/L	J	MDLRL
4-Methyl-2-Pentanone	SW8260B	OW-58	2106c55-004a	120	1,000	µg/L	J	MDLRL
Acetone	SW8260B	OW-58	2106c55-004a	750	1,000	µg/L	U	EBD, MDLRL
Acetone	SW8260B	OW-57	2106c55-005a	480	500	µg/L	U	EBD, MDLRL
Acetone	SW8260B	DUP 6/23/2021	2106c55-012a	280	500	µg/L	U	EBD, MDLRL
Acetone	SW8260B	EB 6/23/2021	2106c55-011a	7.8	10	µg/L	J	MDLRL
Aluminum, Dissolved	E 200.7	DUP 6/23/2021	2106C55-012G	0.19	0.020	mg/L	J	ERPD-FD
Aluminum, Dissolved	E 200.7	MKTF-35	2106C55-009G	ND	0.020	mg/L	UJ	ERPD-FD
Aluminum, Total	E 200.7	MKTF-10	2106C55-001E	0.62	0.020	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	NAPIS-1	2106C55-002E	0.023	0.020	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	OW-58A	2106C55-003E	2.1	0.10	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	OW-58	2106C55-004E	0.94	0.020	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	OW-57	2106C55-005E	5.7	0.20	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	MKTF-38	2106C55-006E	2.3	0.10	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	MKTF-18	2106C55-007F	1.2	0.10	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	MKTF-36	2106C55-008F	0.052	0.020	mg/L	J+	HR-MS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Aluminum, Total	E 200.7	MKTF-35	2106C55-009F	20	1.0	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	DUP 6/23/2021	2106C55-012F	27	1.0	mg/L	J+	HR-MS
Antimony, Dissolved	E200.8	OW-58A	2106C55-003F	0.00046	0.0010	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-38	2106C55-006F	0.00060	0.0010	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-35	2106C55-009G	0.00027	0.0010	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	DUP 6/23/2021	2106C55-012G	0.00056	0.0010	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-10	2106C55-001E	0.011	0.0010	mg/L	J+	HR-MS
Arsenic, Total	E200.8	NAPIS-1	2106C55-002E	0.021	0.0010	mg/L	J+	HR-MS
Arsenic, Total	E200.8	OW-58A	2106C55-003E	0.0043	0.0010	mg/L	J+	HR-MS
Arsenic, Total	E200.8	OW-58	2106C55-004E	0.0042	0.0010	mg/L	J+	HR-MS
Arsenic, Total	E200.8	OW-57	2106C55-005E	0.0040	0.0010	mg/L	J+	HR-MS
Arsenic, Total	E200.8	MKTF-18	2106C55-007F	0.0018	0.0010	mg/L	J+	HR-MS
Arsenic, Total	E200.8	MKTF-36	2106C55-008F	0.016	0.0010	mg/L	J+	HR-MS
Arsenic, Total	E200.8	MKTF-35	2106C55-009F	0.0038	0.0010	mg/L	J+	HR-MS
Arsenic, Total	E200.8	DUP 6/23/2021	2106C55-012F	0.0050	0.0010	mg/L	J+	HR-MS
Arsenic, Total	E200.8	MKTF-38	2106C55-006E	0.00073	0.0010	mg/L	J+	HR-MS, MDLRL
Benzene	SW8260B	Trip Blank	2106c55-013a	0.36	1.0	µg/L	J	MDLRL
Benzene	SW8260B	MKTF-38	2106c55-006a	0.53	1.0	µg/L	U	MDLRL, TBD
Benzene	SW8260B	EB 6/23/2021	2106c55-011a	0.82	1.0	µg/L	U	MDLRL, TBD
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-10	2106C55-001C	4.6	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	NAPIS-1	2106C55-002C	5.5	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-38	2106C55-006C	4.8	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-18	2106C55-007D	4.9	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-36	2106C55-008D	37	50	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-35	2106C55-009D	5.5	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	EB 6/23/2021	2106C55-011C	4.8	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	DUP 6/23/2021	2106C55-012D	4.9	10	µg/L	U	MBD, MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Bromodichloromethane	SW8260B	EB 6/23/2021	2106c55-011a	0.22	1.0	µg/L	J	MDLRL
Carbazole	SW8270C	MKTF-35	2106C55-009D	4.0	5.0	µg/L	J	MDLRL
Carbazole	SW8270C	DUP 6/23/2021	2106C55-012D	4.0	5.0	µg/L	J	MDLRL
Chloroform	SW8260B	MKTF-38	2106c55-006a	0.53	1.0	µg/L	J	MDLRL
Chloromethane	SW8260B	OW-57	2106c55-005a	22	150	µg/L	J	MDLRL
Chloromethane	SW8260B	DUP 6/23/2021	2106c55-012a	50	150	µg/L	J	MDLRL
cis-1,2-Dichloroethene	SW8260B	MKTF-18	2106c55-007a	4.4	5.0	µg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	OW-57	2106C55-005F	0.0027	0.0060	mg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	MKTF-38	2106C55-006F	0.003	0.0060	mg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	DUP 6/23/2021	2106C55-012G	0.0026	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-10	2106C55-001E	0.0033	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	OW-58	2106C55-004E	0.0025	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	OW-57	2106C55-005E	0.0043	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-38	2106C55-006E	0.0041	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-18	2106C55-007F	0.0027	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-36	2106C55-008F	0.0032	0.0060	mg/L	J	MDLRL
Copper, Total	E 200.7	MKTF-35	2106C55-009F	0.0084	0.0060	mg/L	J	ERPD-FD
Copper, Total	E 200.7	DUP 6/23/2021	2106C55-012F	0.013	0.0060	mg/L	J	ERPD-FD
Dibenzofuran	SW8270C	MKTF-10	2106C55-001C	3.3	5.0	µg/L	J	MDLRL
Dibenzofuran	SW8270C	MKTF-18	2106C55-007D	4.4	5.0	µg/L	J	MDLRL
Dibenzofuran	SW8270C	MKTF-35	2106C55-009D	3.4	5.0	µg/L	J	MDLRL
Dibenzofuran	SW8270C	DUP 6/23/2021	2106C55-012D	3.2	5.0	µg/L	J	MDLRL
Di-n-octylphthalate	SW8270C	MKTF-36	2106C55-008D	33	100	µg/L	J	MDLRL
Ethylbenzene	SW8260B	MKTF-18	2106c55-007a	1.5	5	µg/L	U	EBD, MDLRL
Ethylbenzene	SW8260B	EB 6/23/2021	2106c55-011a	0.35	1.0	µg/L	J	MDLRL
Iron, Dissolved	E 200.7	MKTF-10	2106C55-001F	9.7	0.20	mg/L	J	ERPD-FD
Iron, Dissolved	E 200.7	NAPIS-1	2106C55-002F	8.0	0.20	mg/L	J	ERPD-FD

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Iron, Dissolved	E 200.7	OW-58A	2106C55-003F	3.5	0.10	mg/L	J	ERPD-FD
Iron, Dissolved	E 200.7	OW-58	2106C55-004F	9.5	0.40	mg/L	J	ERPD-FD
Iron, Dissolved	E 200.7	OW-57	2106C55-005F	4.8	0.10	mg/L	J	ERPD-FD
Iron, Dissolved	E 200.7	MKTF-38	2106C55-006F	0.033	0.020	mg/L	J	ERPD-FD
Iron, Dissolved	E 200.7	MKTF-18	2106C55-007G	1.5	0.10	mg/L	J	ERPD-FD
Iron, Dissolved	E 200.7	MKTF-36	2106C55-008G	14	0.40	mg/L	J	ERPD-FD
Iron, Dissolved	E 200.7	MKTF-35	2106C55-009G	0.049	0.020	mg/L	J	ERPD-FD
Iron, Dissolved	E 200.7	DUP 6/23/2021	2106C55-012G	5.2	0.20	mg/L	J	ERPD-FD
Iron, Dissolved	E 200.7	EB 6/23/2021	2106C55-011F	ND	0.020	mg/L	UJ	ERPD-FD
Isopropylbenzene	SW8260B	OW-58A	2106c55-003a	37	50	µg/L	J	MDLRL
Isopropylbenzene	SW8260B	OW-58	2106c55-004a	32	100	µg/L	J	MDLRL
Isopropylbenzene	SW8260B	OW-57	2106c55-005a	15	50	µg/L	J	MDLRL
Isopropylbenzene	SW8260B	MKTF-18	2106c55-007a	2.1	5.0	µg/L	J	MDLRL
Lead, Dissolved	E200.8	OW-58A	2106C55-003F	0.0011	0.0025	mg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-38	2106C55-006F	0.000097	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-35	2106C55-009G	0.00021	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-35	2106C55-009F	0.010	0.00050	mg/L	J	ERPD-FD
Lead, Total	E200.8	DUP 6/23/2021	2106C55-012F	0.015	0.00050	mg/L	J	ERPD-FD
Lead, Total	E200.8	MKTF-10	2106C55-001E	0.00031	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	NAPIS-1	2106C55-002E	0.00019	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	OW-58	2106C55-004E	0.00034	0.00050	mg/L	J	MDLRL
MTBE	SW8260B	NAPIS-1	2106c55-002a	3.1	5.0	µg/L	J	MDLRL
Naphthalene	SW8260B	OW-58	2106c55-004a	200	200	µg/L	U	EBD, MDLRL
Naphthalene	SW8260B	EB 6/23/2021	2106c55-011a	0.31	2.0	µg/L	J	MDLRL
Naphthalene	SW8260B	MKTF-10	2106c55-001a	200	20	µg/L	J	DATA-COMP
Naphthalene	SW8270C	MKTF-10	2106c55-001c	120	1.0	µg/L	J	DATA-COMP
Naphthalene	SW8260B	MKTF-36	2106c55-008a	780	100	µg/L	J	DATA-COMP

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Naphthalene	SW8270C	MKTF-36	2106c55-008d	500	20	µg/L	J	DATA-COMP
n-Butylbenzene	SW8260B	MKTF-10	2106c55-001a	21	30	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	OW-58A	2106c55-003a	17	150	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-18	2106c55-007a	1.6	15	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-36	2106c55-008a	58	150	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-35	2106c55-009a	3.0	30	µg/L	J	MDLRL
Nickel, Dissolved	E 200.7	MKTF-10	2106C55-001F	0.017	0.010	mg/L	J-	LR-LCS
Nickel, Dissolved	E 200.7	NAPIS-1	2106C55-002F	0.011	0.010	mg/L	J-	LR-LCS
Nickel, Dissolved	E 200.7	OW-58A	2106C55-003F	0.031	0.010	mg/L	J-	LR-LCS
Nickel, Dissolved	E 200.7	OW-58	2106C55-004F	0.036	0.010	mg/L	J-	LR-LCS
Nickel, Dissolved	E 200.7	OW-57	2106C55-005F	0.062	0.010	mg/L	J-	LR-LCS
Nickel, Dissolved	E 200.7	MKTF-38	2106C55-006F	ND	0.010	mg/L	UJ	LR-LCS
Nickel, Dissolved	E 200.7	MKTF-35	2106C55-009G	ND	0.010	mg/L	UJ	LR-LCS
Nickel, Dissolved	E 200.7	MKTF-18	2106C55-007G	0.0041	0.010	mg/L	J-	LR-LCS, MDLRL
Nickel, Dissolved	E 200.7	MKTF-36	2106C55-008G	0.0054	0.010	mg/L	J-	LR-LCS, MDLRL
Nickel, Dissolved	E 200.7	DUP 6/23/2021	2106C55-012G	ND	0.010	mg/L	UJ	LR-LCS
Nickel, Dissolved	E 200.7	EB 6/23/2021	2106C55-011F	ND	0.010	mg/L	UJ	LR-LCS
Nickel, Total	E 200.7	MKTF-18	2106C55-007F	0.0052	0.010	mg/L	J	MDLRL
Nickel, Total	E 200.7	MKTF-36	2106C55-008F	0.0048	0.010	mg/L	J	MDLRL
Nickel, Total	E 200.7	MKTF-35	2106C55-009F	0.0096	0.010	mg/L	J	MDLRL
Nitrogen, Nitrate	E300	MKTF-35	2106C55-009E	ND	0.50	mg/L	UJ	ERPD-FD
Nitrogen, Nitrate	E300	DUP 6/23/2021	2106C55-012E	0.30	0.10	mg/L	JB	EBD, ERPD-FD
Nitrogen, Nitrate	E300	EB 6/23/2021	2106C55-011D	0.043	0.10	mg/L	J	MDLRL
n-Propylbenzene	SW8260B	OW-58	2106c55-004a	82	100	ug/L	J	MDLRL
n-Propylbenzene	SW8260B	OW-57	2106c55-005a	33	50	µg/L	J	MDLRL
n-Propylbenzene	SW8260B	MKTF-18	2106c55-007a	1.9	5.0	µg/L	J	MDLRL
Phenanthrene	SW8270C	MKTF-35	2106c55-009d	0.28	0.10	µg/L	J	ERPD-FD

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Phenanthrene	SW8270C	DUP 6/23/2021	2106c55-012d	0.18	0.10	µg/L	J	ERPD-FD
p-Isopropyltoluene	SW8260B	MKTF-10	2106c55-001a	8.3	10	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	MKTF-36	2106c55-008a	10	50	µg/L	J	MDLRL
Potassium, Total	E 200.7	MKTF-10	2106C55-001E	0.93	1.0	mg/L	J	MDLRL
Potassium, Total	E 200.7	NAPIS-1	2106C55-002E	0.31	1.0	mg/L	J	MDLRL
Potassium, Total	E 200.7	MKTF-38	2106C55-006E	0.76	1.0	mg/L	J	MDLRL
Potassium, Total	E 200.7	MKTF-18	2106C55-007F	0.80	1.0	mg/L	J	MDLRL
Potassium, Total	E 200.7	MKTF-36	2106C55-008F	0.93	1.0	mg/L	J	MDLRL
Selenium, Dissolved	E200.8	NAPIS-1	2106C55-002F	0.00058	0.0010	mg/L	J	MDLRL
Selenium, Dissolved	E200.8	OW-58A	2106C55-003F	0.00042	0.010	mg/L	J	MDLRL
Selenium, Dissolved	E200.8	OW-57	2106C55-005F	0.00043	0.010	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-35	2106C55-009F	0.0015	0.010	mg/L	J	ERPD-FD
Selenium, Total	E200.8	DUP 6/23/2021	2106C55-012F	0.0025	0.010	mg/L	J	ERPD-FD
Selenium, Total	E200.8	NAPIS-1	2106C55-002E	0.00058	0.010	mg/L	J	MDLRL
Selenium, Total	E200.8	OW-58A	2106C55-003E	0.00047	0.010	mg/L	J	MDLRL
Selenium, Total	E200.8	OW-57	2106C55-005E	0.00081	0.010	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-10	2106C55-001F	0.0015	0.0050	mg/L	J	MDLRL
Styrene	SW8260B	EB 6/23/2021	2106c55-011a	0.3	1.0	µg/L	J	MDLRL
Sulfate	E300	DUP 6/23/2021	2106C55-012E	0.37	0.50	mg/L	J	MDLRL
Tetrachloroethene	SW8260B	MKTF-38	2106c55-006a	0.45	1.0	µg/L	J	MDLRL
Toluene	SW8260B	OW-58	2106c55-004a	85	100	µg/L	U	EBD, MDLRL
Toluene	SW8260B	OW-57	2106c55-005a	42	50	µg/L	U	EBD, MDLRL
Toluene	SW8260B	MKTF-18	2106c55-007a	1.5	5.0	µg/L	U	EBD, MDLRL
Toluene	SW8260B	EB 6/23/2021	2106c55-011a	0.97	1.0	µg/L	J	MDLRL
TPH DRO	SW8015	MKTF-38	2106C55-006B	0.032	0.064	mg/L	U	MBD, MDLRL
TPH DRO	SW8015	EB 6/23/2021	2106C55-011B	0.024	0.064	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	MKTF-38	2106c55-006a	0.028	0.050	mg/L	U	EBD, MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
TPH GRO	SW8015	EB 6/23/2021	2106c55-011a	0.030	0.050	mg/L	J	MDLRL
Xylenes, Total	SW8260B	MKTF-18	2106c55-007a	2.9	7.5	µg/L	U	EBD, MDLRL
Xylenes, Total	SW8260B	EB 6/23/2021	2106c55-011a	0.56	1.5	µg/L	J	MDLRL
Zinc, Dissolved	E 200.7	NAPIS-1	2106C55-002F	0.020	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	OW-58A	2106C55-003F	0.013	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	OW-57	2106C55-005F	0.015	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	MKTF-38	2106C55-006F	0.011	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	MKTF-10	2106C55-001F	0.0068	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	MKTF-18	2106C55-007G	0.0080	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	MKTF-36	2106C55-008G	0.0084	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	MKTF-35	2106C55-009G	0.0061	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	DUP 6/23/2021	2106C55-012G	0.0072	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	EB 6/23/2021	2106C55-011F	0.0091	0.010	mg/L	J	MDLRL
Zinc, Total	E 200.7	MKTF-35	2106C55-009F	0.017	0.010	mg/L	J	ERPD-FD
Zinc, Total	E 200.7	DUP 6/23/2021	2106C55-012F	0.024	0.010	mg/L	J	ERPD-FD
Zinc, Total	E 200.7	OW-57	2106C55-005E	0.0070	0.010	mg/L	J	MDLRL

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-001 Task 0016	Sample Start Date: 09/21/2021
Date Validated: 12/01/2021	Sample End Date: 09/21/2021
Parameters Included: ▪ Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B ▪ 1,2-Dibromoethane (EDB) by EPA Method 504.1 ▪ Semivolatile Organic Compounds (SVOC) by SW-846 Methods 8270C and 8270C with Selective Ion Monitoring (SIM) ▪ Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D ▪ TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified ▪ Total and Dissolved Metals by EPA Methods 200.7 and 200.8 ▪ Total and Dissolved Mercury by EPA Method 245.1 ▪ Anions by EPA Method 300.0	
Laboratory Project ID: 2109B85	
Data Validator: Kyle Power, Environmental Chemist	
Reviewer: Charles Ballek, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Tier II Data Validation Report Summary

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Trip blank
- Equipment blank
- Field blank

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
EB-09-21-21	2109B85-001
MKTF-40	2109B85-002
MKTF-25	2109B85-003
MKTF-24	2109B85-004
OAPIS-1	2109B85-005
NAPIS-2	2109B85-006
NAPIS-3	2109B85-007
KA-3	2109B85-008
FB-09-21-21	2109B85-009
DUP-09-21-21	2109B85-0010
Trip Blank	2109B85-0011

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ⊗ Holding Times and Preservation (Items 6 and 7)
- ○ Initial and Continuing Calibrations (Items 9 and 10)
- ✓ Laboratory Blanks (Items 11 and 12)
- ⊗ MS/MSD (Items 13 and 14)
- ⊗ LCS/LCSD (Items 15 and 16)
- ✓ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Field, Equipment, and Trip Blanks (Items 18 and 19)
- ✓ Field Duplicate (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)
- ✓ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
J+	The result is an estimated concentration, but may be biased high
UJ	Estimated reporting limit
U	Evaluated to be undetected at the reporting limit
JB	Estimated concentration due to blank contamination

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 656 data points. The data completeness calculation does not include any submitted blank sample results. Data points were not rejected. The data completeness measure for this data package is calculated to be 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST	
1. Was the report free of non-conformances identified by the laboratory?	Yes
Comments: The laboratory did not identify non-conformances regarding the analytical data.	
2. Were the data free of data qualification flags and/or notes used by the laboratory? If no, define.	No
Comments: The laboratory used the following data qualification flags with this data set. D – Sample diluted due to matrix J – Analyte detected below quantitation limits R – RPD outside control limits S – % Recovery outside of range due to dilution or matrix * – Value exceeds Maximum Contaminant Level	
3. Were sample CoC forms and custody procedures complete?	Yes
Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.	
4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable?	Yes
Comments: The detection limits appeared to be acceptable. The following dilutions were applied. Method 8260B: Dilutions of 5 to 100 times were applied for the VOC analysis of the samples. Method 8270C: Dilutions of 10 times were applied for the SVOC analysis of samples OAPIS-1 and NAPIS-2. A dilution of 10 times was applied for the 1,4-dioxane analysis of sample MKTF-25. Method 8015D (GRO): A dilution of 5 times was applied for the TPH GRO analysis of sample OAPIS-1; and dilutions of 10 times were applied for samples MKTF-25, MKTF-24, and NAPIS-2. Method 8015D (DRO/MRO): A dilution of 5 times was applied for the TPH DRO and MRO analyses of sample OAPIS-1. Method 200.7: Dilutions of 5 and 10 times were applied for the metals analyses of samples. Method 200.8: Dilutions of 5 times were applied for the total metal analyses of samples MKTF-40 and DUP-09-21-21. Method 300.0: Dilutions of 5 to 500 times were applied for the analyses of anions for the samples.	
5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC?	Yes
Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.	
6. Were samples received in good condition within method-specified requirements?	No
Comments: Samples were received on ice, in good condition, and with the cooler temperatures outside the recommended temperature range of 4°C ± 2°C between 8.8°C and 13.4°C as noted on the *Sample Log-in Check List*. The cooler temperatures above 6°C were evaluated to be acceptable since the samples were received at the laboratory on the same day (within 24 hours) of the last sample collection time, and temperature equilibrium had not been established.	
7. Were samples extracted/digested and analyzed within method-specified or technical holding times?	Yes
Comments: The samples were extracted/digested and analyzed within method-specific holding times.	

VALIDATION CRITERIA CHECKLIST

8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil. — Yes

Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.

9. Did the laboratory provide any specific initial and/or continuing calibration results? — No

Comments: Initial and continuing calibration data were not included as part of this data set.

10. If initial and/or continuing calibration results were provided, were the results within acceptable limits? — N/A

Comments: Initial and continuing calibration data were not included as part of this data set.

11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? — Yes

Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.

12. Were target analytes reported as not detected in the laboratory blanks? — Yes

Comments: Target analytes were reported as not detected in the laboratory blanks.

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? — Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batch. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
200.7	Total Metals	62794	EB-09-21-21 and MKTF-40
200.7	Dissolved Metals	B81654	EB-09-21-21
200.8	Total Metals	62794	MKTF-24 and MKTF-25
200.8	Dissolved Metals	C81686	EB-09-21-21
200.8	Dissolved Metals	C81765	MKTF-24
245.1	Mercury	62871	DUP-09-21-21
300.0	Anions	R81507	EB-09-21-21
300.0	Chloride	R81599	Not Prepared
504.1	EDB	62893	Trip Blank
8015D	TPH DRO and MRO	62819	Not Prepared
8260B	VOC	R81591	Not Prepared
8260B	VOC	R81622	Not Prepared
8260B	VOC	R81662	Not Prepared
8270C	SVOC	62838	Not Prepared
8270C SIM	SVOC	62813	Not Prepared
8015D	GRO	G81591	Not Prepared
8015D	GRO	G81622	Not Prepared
8015D	GRO	G81662	Not Prepared

Not Prepared – Matrix spikes were not prepared/reported for this batch.

VALIDATION CRITERIA CHECKLIST

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? — No

Comments: The MS/MSD percent recoveries and RPDs for project samples were within data validation and laboratory QC limits, with the following exceptions.

Method 200.7: The laboratory noted that the MS/MSD RPD values for analytes in batch 62794 were outside QC limits; however, no MS sample is provided to confirm these values. Qualification was not required based on these findings.

The MS and MSD recoveries for total iron from batch 62794 were outside data validation QC limits of 75-125% at 141% and 136%, respectively. Iron was detected in associated samples and the results were assigned J+ qualifiers due to evidence of potential high bias. Total iron was not detected in sample EB-09-21-21 in this batch and qualification of that result was not required.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? — Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? — No

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits, with the following exception.

Method 8015D (DRO): **The LCS/LCSD RPD value for TPH DRO from batch 62819 exceeded the laboratory QC limit of 20% at 27.9%. The TPH DRO results were qualified as J due to evidence of poor precision.**

17. Were surrogate recoveries within laboratory QC limits? — Yes

Comments: Surrogate recoveries were within laboratory QC limits or were not applicable because the surrogates were diluted out.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? — Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One trip blank sample, Trip Blank, one field blank sample, FB-09-21-21, and one equipment blank sample, EB-09-21-21, were collected as part of this sample set.

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? — No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
EB-09-21-21	8260B	Acetone	3.9 µg/L
EB-09-21-21	**8015D**	**TPH DRO**	**0.026 mg/L**
EB-09-21-21	**300.0**	**Nitrate**	**0.05 mg/L**
EB-09-21-21	**200.7**	**Zinc, Dissolved**	**0.008 mg/L**
FB-09-21-21	**8260B**	**Acetone**	**5.7 µg/L**

Detections of the identified analytes in the associated samples that were less than the reporting limits were qualified as U. Dissolved zinc results were greater than the blank detection but less than 10 times the blank concentration and were qualified as JB.

Non-detections of the identified analytes in the associated samples and results greater than 10 times the blank detections did not require qualification.

VALIDATION CRITERIA CHECKLIST

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample DUP-09-21-21 was collected as a field duplicate of sample MKTF-40.

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? Yes

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples.

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? N/A

Comments: Laboratory duplicate samples were not prepared/reported for this sample set.

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? Yes

Comments: Target analytes were not reported by more than one method in this data set, with the following exception.

Target analyte 1,4-dichlorobenzene was reported by both Method 8260B and Method 8270C. This analyte was reported as not detected in the project samples by both methods.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
KA-3	Copper	0.0022	0.0026	0.0010	mg/L	16.7%
MKTF-40	Silver	0.0013	0.0015	0.0050	mg/L	14.3% ♦
EB-09-21-21	Zinc	ND	0.008	0.010	mg/L	----- ♦
MKTF-25	Zinc	ND	0.017	0.010	mg/L	----- ♦
MKTF-24	Zinc	0.008	0.013	0.010	mg/L	47.6% ♦
OAPIS-1	Zinc	0.037	0.039	0.050	mg/L	5.3% ♦
NAPIS-2	Zinc	ND	0.011	0.010	mg/L	----- ♦
NAPIS-3	Zinc	ND	0.011	0.010	mg/L	----- ♦
KA-3	Zinc	0.0089	0.019	0.010	mg/L	72.4% ♦
DUP-09-21-21	Zinc	ND	0.017	0.010	mg/L	----- ♦

♦ = *Both of the detections were less than 2 times the applicable reporting limits and qualification of data was not required.*

The analytical results greater than 2 times the applicable RLs for total and dissolved metals fractions were within the RPD limit of 30% indicating that the results were comparable, and qualification of the data was not required.

FIELD DUPLICATE SUMMARY

Client Sample ID: MKTF-40 Field Duplicate Sample ID: DUP-09-21-21				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
1,1-Dichloroethane	8260B	0.78 µg/L	0.79 µg/L	1.3% +/-RL
1,2-Dichloroethane	8260B	0.33 µg/L	0.34 µg/L	3.0% +/-RL
MTBE	8260B	0.94 µg/L	0.97 µg/L	3.1% +/-RL
1,4-Dioxane	8270C SIM	6.7 µg/L	7.2 µg/L	7.2%
Pyrene	8270C SIM	ND (0.20 µg/L)	0.16 µg/L	DL
TPH DRO	8015D	0.040 mg/L	0.048 mg/L	18.2% +/-RL
Barium, Dissolved	200.7	0.058 mg/L	0.058 mg/L	0.0%
Barium, Total	200.7	0.074 mg/L	0.066 mg/L	11.4%
Iron, Total	200.7	0.65 mg/L	0.71 mg/L	8.8%
Manganese, Dissolved	200.7	0.0013 mg/L	0.0013 mg/L	0.0% +/-RL
Manganese, Total	200.7	0.016 mg/L	0.016 mg/L	0.0%
Silver, Dissolved	200.7	0.0015 mg/L	0.0016 mg/L	6.5% +/-RL
Silver, Total	200.7	0.0013 mg/L	0.0017 mg/L	26.7% +/-RL
Zinc, Dissolved	200.7	0.0072 mg/L	0.017 mg/L	81.0% +/-RL
Zinc, Total	200.7	0.0099 mg/L	ND (0.010 mg/L)	DL
Arsenic, Dissolved	200.8	0.00072 mg/L	0.00078 mg/L	8.0% +/-RL
Arsenic, Total	200.8	0.0011 mg/L	0.00094 mg/L	15.7% +/-RL
Copper, Dissolved	200.8	0.00069 mg/L	0.00079 mg/L	13.5% +/-RL
Copper, Total	200.8	0.0011 mg/L	0.0011 mg/L	0.0% +/-RL
Lead, Total	200.8	0.00081 mg/L	0.00079 mg/L	2.5% +/-RL
Selenium, Dissolved	200.8	0.00054 mg/L	0.0020 mg/L	115.0% +/-RL
Selenium, Total	200.8	0.0024 mg/L	0.0025 mg/L	4.1% +/-RL
Chloride	300.0	3,500 mg/L	3,200 mg/L	9.0%
Nitrogen, Nitrate	300.0	0.14 mg/L	0.14 mg/L	0.0% +/-RL
Sulfate	300.0	550 mg/L	560 mg/L	1.8%

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
HR-MS	The MS and/or MSD percent recovery was greater than the upper acceptable limit indicating possible matrix interference.
ERPD-LCS	The LCS/LCSD RPD exceeded the upper acceptable limit indicating poor precision.
FBD	Field blank detection
EBD	Equipment blank detection
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,1-Dichloroethane	SW8260B	MKTF-40	2109B85-002a	0.78	1	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	OAPIS-1	2109B85-005a	2.1	5	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	DUP-09-21-21	2109b85-010a	0.79	1	µg/L	J	MDLRL
1,1-Dichloroethene	SW8260B	MKTF-24	2109B85-004a	5.1	10	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	MKTF-40	2109B85-002a	0.33	1	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	MKTF-24	2109B85-004a	4.6	5	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	OAPIS-1	2109B85-005a	1.4	5	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	NAPIS-3	2109B85-007a	0.28	1	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	KA-3	2109B85-008a	0.28	1	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	DUP-09-21-21	2109b85-010a	0.34	1	µg/L	J	MDLRL
1,4-Dioxane	SW8270C	OAPIS-1	2109b85-005d	1.8	10	µg/L	J	MDLRL
1,4-Dioxane	SW8270C	NAPIS-2	2109b85-006d	2	10	µg/L	J	MDLRL
1,4-Dioxane	SW8270C	NAPIS-3	2109b85-007d	0.32	1	µg/L	J	MDLRL
1,4-Dioxane	SW8270C	KA-3	2109b85-008d	0.36	1	µg/L	J	MDLRL
Acetone	SW8260B	EB-09-21-21	2109B85-001a	3.9	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	MKTF-24	2109B85-004a	28	100	µg/L	U	FBD, MDLRL
Acetone	SW8260B	OAPIS-1	2109B85-005a	23	50	µg/L	U	FBD, MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Acetone	SW8260B	NAPIS-2	2109B85-006a	26	100	µg/L	U	FBD, MDLRL
Acetone	SW8260B	NAPIS-3	2109B85-007a	3.4	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	KA-3	2109B85-008a	2.9	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	FB-09-21-21	2109b85-009a	5.7	10	µg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-40	2109B85-002G	0.00072	0.001	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	KA-3	2109B85-008G	0.00075	0.001	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	DUP-09-21-21	2109B85-010G	0.00078	0.001	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-40	2109B85-002F	0.0011	0.005	mg/L	J	MDLRL
Arsenic, Total	E200.8	KA-3	2109B85-008F	0.00087	0.001	mg/L	J	MDLRL
Arsenic, Total	E200.8	DUP-09-21-21	2109B85-010F	0.00094	0.005	mg/L	J	MDLRL
Benzene	SW8260B	KA-3	2109B85-008a	0.79	1	µg/L	J	MDLRL
Carbazole	SW8270C	MKTF-25	2109b85-003d	3.7	5	µg/L	J	MDLRL
Carbazole	SW8270C	MKTF-24	2109b85-004d	3.8	5	µg/L	J	MDLRL
Chloromethane	SW8260B	MKTF-25	2109B85-003a	23	30	µg/L	J	MDLRL
Copper, Dissolved	E200.8	MKTF-40	2109B85-002G	0.00069	0.001	mg/L	J	MDLRL
Copper, Dissolved	E200.8	MKTF-25	2109B85-003G	0.00094	0.001	mg/L	J	MDLRL
Copper, Dissolved	E200.8	NAPIS-3	2109B85-007G	0.00051	0.001	mg/L	J	MDLRL
Copper, Dissolved	E200.8	DUP-09-21-21	2109B85-010G	0.00079	0.001	mg/L	J	MDLRL
Copper, Total	E200.8	MKTF-25	2109B85-003F	0.00094	0.001	mg/L	J	MDLRL
Copper, Total	E200.8	MKTF-24	2109B85-004F	0.00063	0.001	mg/L	J	MDLRL
Copper, Total	E200.8	NAPIS-2	2109B85-006F	0.00054	0.001	mg/L	J	MDLRL
Copper, Total	E200.8	NAPIS-3	2109B85-007F	0.00073	0.001	mg/L	J	MDLRL
Iron, Dissolved	E 200.7	KA-3	2109B85-008G	0.018	0.02	mg/L	J	MDLRL
Iron, Total	E 200.7	MKTF-40	2109B85-002F	0.65	0.25	mg/L	J+	HR-MS
Iron, Total	E 200.7	MKTF-25	2109B85-003F	0.96	0.05	mg/L	J+	HR-MS
Iron, Total	E 200.7	MKTF-24	2109B85-004F	0.67	0.05	mg/L	J+	HR-MS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Iron, Total	E 200.7	OAPIS-1	2109B85-005F	2	0.25	mg/L	J+	HR-MS
Iron, Total	E 200.7	NAPIS-2	2109B85-006F	2.3	0.5	mg/L	J+	HR-MS
Iron, Total	E 200.7	NAPIS-3	2109B85-007F	1.4	0.5	mg/L	J+	HR-MS
Iron, Total	E 200.7	KA-3	2109B85-008F	0.19	0.05	mg/L	J+	HR-MS
Iron, Total	E 200.7	DUP-09-21-21	2109B85-010F	0.71	0.05	mg/L	J+	HR-MS
Isopropylbenzene	SW8260B	MKTF-25	2109B85-003a	4.4	10	µg/L	J	MDLRL
Lead, Dissolved	E200.8	NAPIS-2	2109B85-006G	0.000068	0.0005	mg/L	J	MDLRL
Lead, Dissolved	E200.8	KA-3	2109B85-008G	0.00017	0.0005	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-40	2109B85-002F	0.00081	0.0025	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-25	2109B85-003F	0.00019	0.0005	mg/L	J	MDLRL
Lead, Total	E200.8	NAPIS-2	2109B85-006F	0.00034	0.0005	mg/L	J	MDLRL
Lead, Total	E200.8	NAPIS-3	2109B85-007F	0.00031	0.0005	mg/L	J	MDLRL
Lead, Total	E200.8	KA-3	2109B85-008F	0.00042	0.0005	mg/L	J	MDLRL
Lead, Total	E200.8	DUP-09-21-21	2109B85-010F	0.00079	0.0025	mg/L	J	MDLRL
Manganese, Dissolved	E 200.7	MKTF-40	2109B85-002G	0.0013	0.002	mg/L	J	MDLRL
Manganese, Dissolved	E 200.7	DUP-09-21-21	2109B85-010G	0.0013	0.002	mg/L	J	MDLRL
Methylene Chloride	SW8260B	MKTF-25	2109B85-003a	6.5	30	µg/L	J	MDLRL
Methylene Chloride	SW8260B	MKTF-24	2109B85-004a	8.1	30	µg/L	J	MDLRL
Methylene Chloride	SW8260B	OAPIS-1	2109B85-005a	2.6	15	µg/L	J	MDLRL
MTBE	SW8260B	MKTF-40	2109B85-002a	0.94	1	µg/L	J	MDLRL
MTBE	SW8260B	DUP-09-21-21	2109b85-010a	0.96	1	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-24	2109B85-004a	6.6	30	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	NAPIS-3	2109B85-007a	0.31	3	µg/L	J	MDLRL
Nitrogen, Nitrate	E300	MKTF-40	2109B85-002E	0.14	0.5	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	MKTF-25	2109B85-003E	0.14	0.5	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	DUP-09-21-21	2109B85-010E	0.14	0.5	mg/L	U	EBD, MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Nitrogen, Nitrate	E300	EB-09-21-21	2109B85-001E	0.05	0.1	mg/L	J	MDLRL
n-Propylbenzene	SW8260B	KA-3	2109B85-008a	0.53	1	µg/L	J	MDLRL
Phenol	SW8270C	NAPIS-3	2109b85-007d	0.85	5	µg/L	J	MDLRL
Potassium, Dissolved	E 200.7	NAPIS-2	2109B85-006G	0.35	1	mg/L	J	MDLRL
Potassium, Dissolved	E 200.7	NAPIS-3	2109B85-007G	0.45	1	mg/L	J	MDLRL
Pyrene	SW8270C	DUP-09-21-21	2109b85-010d	0.16	0.2	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-24	2109B85-004a	4.5	10	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	NAPIS-2	2109B85-006a	2.8	10	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	KA-3	2109B85-008a	0.18	1	µg/L	J	MDLRL
Selenium, Dissolved	E200.8	MKTF-40	2109B85-002G	0.00054	0.001	mg/L	J	MDLRL
Selenium, Dissolved	E200.8	MKTF-24	2109B85-004G	0.00055	0.001	mg/L	J	MDLRL
Selenium, Dissolved	E200.8	NAPIS-3	2109B85-007G	0.00039	0.001	mg/L	J	MDLRL
Selenium, Dissolved	E200.8	KA-3	2109B85-008G	0.00046	0.001	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-40	2109B85-002F	0.0024	0.005	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-25	2109B85-003F	0.00056	0.001	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-24	2109B85-004F	0.00082	0.001	mg/L	J	MDLRL
Selenium, Total	E200.8	NAPIS-2	2109B85-006F	0.00078	0.001	mg/L	J	MDLRL
Selenium, Total	E200.8	NAPIS-3	2109B85-007F	0.00059	0.001	mg/L	J	MDLRL
Selenium, Total	E200.8	KA-3	2109B85-008F	0.00053	0.001	mg/L	J	MDLRL
Selenium, Total	E200.8	DUP-09-21-21	2109B85-010F	0.0025	0.005	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-40	2109B85-002G	0.0015	0.005	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	DUP-09-21-21	2109B85-010G	0.0016	0.005	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-40	2109B85-002F	0.0013	0.005	mg/L	J	MDLRL
Silver, Total	E 200.7	DUP-09-21-21	2109B85-010F	0.0017	0.005	mg/L	J	MDLRL
tert-Butylbenzene	SW8260B	NAPIS-3	2109B85-007a	0.42	1	µg/L	J	MDLRL
TPH DRO	SW8015	MKTF-40	2109B85-002C	0.04	0.064	mg/L	U	EBD, ERPD-LCS, MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
TPH DRO	SW8015	DUP-09-21-21	2109B85-010C	0.048	0.064	mg/L	U	EBD, ERPD-LCS, MDLRL
TPH DRO	SW8015	MKTF-25	2109B85-003C	0.63	0.064	mg/L	J	ERPD-LCS
TPH DRO	SW8015	MKTF-24	2109B85-004C	0.65	0.064	mg/L	J	ERPD-LCS
TPH DRO	SW8015	OAPIS-1	2109B85-005C	7.1	0.32	mg/L	J	ERPD-LCS
TPH DRO	SW8015	NAPIS-2	2109B85-006C	1.7	0.064	mg/L	J	ERPD-LCS
TPH DRO	SW8015	NAPIS-3	2109B85-007C	0.62	0.064	mg/L	J	ERPD-LCS
TPH DRO	SW8015	KA-3	2109B85-008C	0.43	0.064	mg/L	J	ERPD-LCS
TPH DRO	SW8015	EB-09-21-21	2109B85-001C	0.026	0.064	mg/L	J	ERPD-LCS, MDLRL
Vinyl Chloride	SW8260B	MKTF-25	2109B85-003a	8.9	10	µg/L	J	MDLRL
Xylenes, Total	SW8260B	MKTF-24	2109B85-004a	7.6	15	µg/L	J	MDLRL
Xylenes, Total	SW8260B	NAPIS-2	2109B85-006a	14	15	µg/L	J	MDLRL
Zinc, Dissolved	E 200.7	MKTF-25	2109B85-003G	0.017	0.01	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	MKTF-24	2109B85-004G	0.013	0.01	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	NAPIS-2	2109B85-006G	0.011	0.01	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	NAPIS-3	2109B85-007G	0.011	0.01	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	KA-3	2109B85-008G	0.019	0.01	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	DUP-09-21-21	2109B85-010G	0.017	0.01	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	MKTF-40	2109B85-002G	0.0072	0.01	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	OAPIS-1	2109B85-005G	0.039	0.05	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	EB-09-21-21	2109B85-001G	0.008	0.01	mg/L	J	MDLRL
Zinc, Total	E 200.7	MKTF-40	2109B85-002F	0.0099	0.01	mg/L	J	MDLRL
Zinc, Total	E 200.7	MKTF-24	2109B85-004F	0.008	0.01	mg/L	J	MDLRL
Zinc, Total	E 200.7	OAPIS-1	2109B85-005F	0.037	0.05	mg/L	J	MDLRL
Zinc, Total	E 200.7	KA-3	2109B85-008F	0.0089	0.01	mg/L	J	MDLRL

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-001 Task 0016	Sample Start Date: 09/22/2021
Date Validated: 12/09/2021	Sample End Date: 09/22/2021
Parameters Included: ▪ Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B ▪ Semivolatile Organic Compounds (SVOC) by SW-846 Methods 8270C and 8270C with Selective Ion Monitoring (SIM) ▪ Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D ▪ TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified ▪ Total and Dissolved Metals by EPA Methods 200.7 and 200.8 ▪ Total and Dissolved Mercury by EPA Method 245.1 ▪ Anions by EPA Method 300.0	
Laboratory Project ID: 2109C62	
Data Validator: Kyle Power, Environmental Chemist	
Reviewer: Charles Ballek, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Field blank
- Equipment blank

Tier II Data Validation Report Summary

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
EB-09-22-21	2109C62-001
MKTF-09-22-21	2109C62-002
STP-1-NW	2109C62-003
OW-59	2109C62-004
FB-09-22-21	2109C62-005
DUP-09-22-21	2109C62-006

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ○ Initial and Continuing Calibrations (Items 9 and 10)
- ⊗ Laboratory Blanks (Items 11 and 12)
- ⊗ MS/MSD (Items 13 and 14)
- ⊗ LCS/LCSD (Items 15 and 16)
- ⊗ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Field and Equipment Blanks (Items 18 and 19)
- ⊗ Field Duplicate (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)
- ⊗ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
J+	The result is an estimated concentration, but may be biased high
UJ	Estimated reporting limit
U	Evaluated to be undetected at the reporting limit
JB	Estimated concentration due to blank contamination
R	Rejected, data not usable

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 246 data points. The data completeness calculation does not include any submitted blank sample results. Three data points were rejected. The data completeness measure for this data package is calculated to be 98.78% and is acceptable.

VALIDATION CRITERIA CHECKLIST	
1. Was the report free of non-conformances identified by the laboratory?	Yes
Comments: The laboratory did not identify non-conformances regarding the analytical data.	
2. Were the data free of data qualification flags and/or notes used by the laboratory? If no, define.	No
Comments: The laboratory used the following data qualification flags with this data set. D – Sample diluted due to matrix J – Analyte detected below quantitation limits S – % Recovery outside of range due to dilution or matrix * – Value exceeds Maximum Contaminant Level	
3. Were sample CoC forms and custody procedures complete?	Yes
Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.	
4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable?	Yes
Comments: The detection limits appeared to be acceptable. The following dilutions were applied. Method 200.7: Dilutions of 5 and 10 times were applied for the metals analyses of samples OW-59 and DUP-09-22-21. A dilution of 10 times was applied for the total iron analysis of sample MKTF-09-22-21. Method 200.8: Dilutions of 5 times were applied for the total metal analyses of samples OW-59 and DUP-09-22-21. Method 300.0: Dilutions of 5 to 200 times were applied for the anions analyses of the samples.	
5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC?	Yes
Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.	
6. Were samples received in good condition within method-specified requirements?	No
Comments: Samples were received on ice, in good condition, and with the cooler temperatures both within and outside the recommended temperature range of 4°C ± 2°C at 4.2°C and 6.1°C as noted on the *Sample Log-in Check List*. The cooler temperature above 6°C was judged as acceptable since the samples were analyzed within method holding times.	
7. Were samples extracted/digested and analyzed within method-specified or technical holding times?	Yes
Comments: The samples were extracted/digested and analyzed within method-specific holding times.	
8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil.	Yes
Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.	
9. Did the laboratory provide any specific initial and/or continuing calibration results?	No
Comments: Initial and continuing calibration data were not included as part of this data set.	
10. If initial and/or continuing calibration results were provided, were the results within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set.	

VALIDATION CRITERIA CHECKLIST

11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.

12. Were target analytes reported as not detected in the laboratory blanks? No

Comments: Target analytes were reported as not detected in the laboratory blanks, with the following exception.

Method 200.8: **Total copper was detected in the method blank for batch 62798 at a concentration of 0.00046 mg/L. Copper was detected in the associated samples at levels greater than the blank detection but less than 10 times the blank concentration and the results were qualified as JB.** Total copper non-detections in the associated samples did not require qualification.

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batch. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
200.7	Total Metals	62798	EB-09-22-21
200.7	Dissolved Metals	C81654	EB-09-22-21
200.8	Total Metals	62798	Not Prepared
200.8	Dissolved Metals	C81765	Not Prepared
200.8	Dissolved Metals	D81765	Not Prepared
200.8	Dissolved Metals	B81815	Not Prepared
245.1	Mercury	63015	Not Prepared
300.0	Anions	R81536	EB-09-22-21
300.0	Chloride and Sulfate	R81637	Not Prepared
8015D	TPH DRO and MRO	62819	Not Prepared
8015D	TPH DRO and MRO	62868	Not Prepared
8260B	VOC	R81622	STP-1-NW
8270C	SVOC	62838	Not Prepared
8270C SIM	SVOC	62813	Not Prepared
8015D	GRO	G81622	OW-59

Not Prepared – Matrix spikes were not prepared/reported for this batch.

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? No

Comments: The MS/MSD percent recoveries and RPDs for project samples were within data validation and laboratory QC limits, with the following exception.

Method 8260B: **The MS and MSD recoveries for benzene from batch R81622 were outside laboratory QC limits of 70-130% at 133% and 130%, respectively. Benzene was detected in associated sample MKTF-09-22-21 and the result was qualified as J+ to indicate an estimated concentration that may be biased high.**

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

VALIDATION CRITERIA CHECKLIST

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? No

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits, with the following exception.

Method 200.7: **The low level LCS (LLLCS) recovery for total barium from batch 62798 was outside laboratory QC limits of 50-150% at 183%. Barium was detected in associated samples in this batch and the results were qualified as J+ due to evidence of potential high bias.** Qualification was not required for sample EB-09-22-21 as barium was not detected in this sample.

17. Were surrogate recoveries within laboratory QC limits? No

Comments: Surrogate recoveries were within laboratory QC limits, with the exceptions listed in the following table.

Method	Surrogate	Sample	Surrogate Recovery	QC Limits
8270C	**2-Fluorophenol**	**STP-1-NW**	**2.30%**	**15-87%**
8270C	**Phenol-d_5**	**STP-1-NW**	**11.2%**	**15-67.5%**
8270C	**2,4,6-Tribromophenol**	**STP-1-NW**	**3.50%**	**15-122%**
8270C	**2-Fluorophenol**	**OW-59**	**0.842%**	**15-87%**
8270C	**Phenol-d_5**	**OW-59**	**1.92%**	**15-67.5%**
8270C	**2,4,6-Tribromophenol**	**OW-59**	**2.74%**	**15-122%**
8270C SIM	Nitrobenzene-d_5	OW-59	154%	21.9-89.8%
8270C SIM	2-Fluorobiphenyl	OW-59	120%	15-84.5%
8270C SIM	4-Terphenyl-d_{14}	OW-59	254%	73.1-152%
8270C	**2-Fluorophenol**	**DUP-09-22-21**	**1.54%**	**15-87%**
8270C	**Phenol-d_5**	**DUP-09-22-21**	**6.08%**	**15-67.5%**
8270C	**2,4,6-Tribromophenol**	**DUP-09-22-21**	**3.21%**	**15-122%**

The analyte associated with the non-compliant Method 8270C surrogates, phenol, was not detected in samples in samples STP-1-NW, OW-59, and DUP-09-22-21, and the results were qualified as R due to evidence of extreme low bias (recoveries less than 10%). Qualification was not required for analytes not associated with the non-compliant surrogates.

Qualification was not required for the Method 8270C SIM surrogates based on the evidence of potential high bias as the associated analytes were not detected in sample OW-59.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One field blank sample, FB-09-22-21, and one equipment blank sample, EB-09-22-21, were collected as part of this sample set.

VALIDATION CRITERIA CHECKLIST

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
EB-09-22-21	8260B	Acetone	2.7 µg/L
EB-09-22-21	**300.0**	**Nitrate**	**0.07 mg/L**
EB-09-22-21	**200.7**	**Zinc, Dissolved**	**0.009 mg/L**
FB-09-22-21	**8260B**	**Acetone**	**4.6 µg/L**

Detections of the identified analytes in the associated samples that were less than the reporting limits were qualified as U. Dissolved zinc was detected in sample STP-1-NW at a concentration greater than the blank detection but less than 10 times the blank concentration and the result was qualified as JB.

Non-detections of the identified analytes in the associated samples and results greater than 10 times the blank detections did not require qualification.

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample DUP-09-22-21 was collected as a field duplicate of sample OW-59.

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? No

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples, with the following exceptions.

The RPD values for total barium and iron greatly exceeded the data validation QC limit for samples OW-59 and DUP-09-22-21 at 149.2% and 158.2%, respectively. Total barium and iron were qualified as J and UJ for the associated samples due to evidence of extreme poor precision (RPD greater than 100%).

The RPD values for dissolved iron, total manganese, and total copper exceeded the data validation QC limit of 30%, which was evidence of poor precision. Dissolved iron, total manganese, and total copper were qualified as J for samples OW-59 and DUP-09-22-21 due to evidence of poor precision.

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? N/A

Comments: Laboratory duplicate samples were not prepared/reported for this sample set.

VALIDATION CRITERIA CHECKLIST

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? Yes

Comments: Target analytes were not reported by more than one method in this data set, with the following exception.

Target analyte 1,4-dichlorobenzene was reported by both Method 8260B and Method 8270C. This analyte was reported as not detected in the project samples by both methods.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
STP-1-NW	Arsenic	0.0025	0.0027	0.0010	mg/L	7.7%
DUP-09-22-21	Arsenic	0.0043	0.0045	0.0010	mg/L	4.5%
STP-1-NW	Selenium	0.0063	0.0081	0.0010	mg/L	25.0%
DUP-09-22-21	**Selenium**	**ND**	**0.0027**	**0.0010**	**mg/L**	**-----**
EB-09-22-21	Zinc	ND	0.009	0.010	mg/L	----- ♦
MKTF-09-22-21	Zinc	0.0069	0.0080	0.010	mg/L	14.8% ♦
STP-1-NW	Zinc	ND	0.013	0.010	mg/L	----- ♦

♦ = *Both of the detections were less than 2 times the applicable reporting limits and qualification of data was not required.*

The analytical results greater than 2 times the applicable RLs for total and dissolved metals fractions were within the RPD limit of 30% indicating that the results were comparable, and qualification of the data was not required.

An RPD value could not be calculated for total and dissolved selenium because the total fraction was not detected in sample DUP-09-22-21. As the detection of dissolved selenium was greater than two times the reporting limits in the identified sample, the dissolved and total selenium results were qualified as J and UJ, respectively.

FIELD DUPLICATE SUMMARY

Client Sample ID: OW-59 Field Duplicate Sample ID: DUP-09-22-21				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Acetone	8260B	2.9 µg/L	3.3 µg/L	12.9% +/-RL
MTBE	8260B	15 µg/L	15 µg/L	0.0%
TPH DRO	8015D	0.36 mg/L	0.32 mg/L	11.8%
TPH GRO	8015D	2.7 mg/L	2.7 mg/L	0.0%
Barium, Dissolved	200.7	0.011 mg/L	0.011 mg/L	0.0% +/-RL
Barium, Total	**200.7**	**0.11 mg/L**	**0.016 mg/L**	**149.2%**
Iron, Dissolved	**200.7**	**0.046 mg/L**	**0.016 mg/L**	**96.8%**
Iron, Total	**200.7**	**3.6 mg/L**	**0.42 mg/L**	**158.2%**
Manganese, Dissolved	200.7	0.045 mg/L	0.045 mg/L	0.0%
Manganese, Total	**200.7**	**0.14 mg/L**	**0.054 mg/L**	**88.7%**
Zinc, Total	200.7	0.0072 mg/L	ND (0.050 mg/L)	DL
Arsenic, Dissolved	200.8	0.0040 mg/L	0.0045 mg/L	11.8% +/-RL
Arsenic, Total	200.8	0.0054 mg/L	0.0043 mg/L	22.7% +/-RL
Copper, Dissolved	200.8	ND (0.0050 mg/L)	0.0011 mg/L	DL
Copper, Total	**200.8**	**0.0033 mg/L**	**0.0012 mg/L**	**93.3%**
Lead, Total	200.8	0.0021 mg/L	ND (0.0025 mg/L)	DL
Selenium, Dissolved	200.8	0.0024 mg/L	0.0027 mg/L	11.8% +/-RL
Selenium, Total	200.8	0.0028 mg/L	ND (0.0050 mg/L)	DL
Chloride	300.0	2,400 mg/L	2,400 mg/L	0.0%
Nitrogen, Nitrate	300.0	0.20 mg/L	ND (0.50) mg/L	DL
Sulfate	300.0	2,500 mg/L	2,500 mg/L	0.0%

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD values for total barium and iron greatly exceeded the data validation QC limit and the results were qualified as J and UJ for the associated samples due to evidence of extremely poor precision.

The RPD values for dissolved iron, total manganese, and total copper exceeded the data validation QC limit and was qualified as J for samples OW-59 and DUP-09-22-21 due to evidence of poor precision.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
MBD	Method blank detection
HR-MS	The MS and/or MSD percent recovery was greater than the upper acceptable limit indicating possible matrix interference.
HR-LCS	The LCS and/or LCSD percent recovery was greater than the upper acceptable limit indicating a possible high bias.
LR-SUR	The surrogate percent recovery was less than the lower acceptable limit indicating a possible low bias.
FBD	Field blank detection
EBD	Equipment blank detection
ERPD-FD	High field duplicate RPD.
DIS-TOT	Dissolved metals concentration was greater than the associated total metals result
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,4-Dioxane	SW8270C	MKTF-09-22-21	2109c62-002d	0.48	1	µg/L	J	MDLRL
Acetone	SW8260B	EB-09-22-21	2109c62-001a	2.7	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	STP-1-NW	2109c62-003a	2.8	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	OW-59	2109c62-004a	2.9	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	DUP-09-22-21	2109c62-006a	3.3	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	FB-09-22-21	2109c62-005a	4.6	10	µg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-09-22-21	2109C62-002G	0.00061	0.001	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	OW-59	2109C62-004G	0.004	0.005	mg/L	J	MDLRL
Arsenic, Total	E200.8	DUP-09-22-21	2109C62-006F	0.0043	0.005	mg/L	J	MDLRL
Barium, Total	E 200.7	EB-09-22-21	2109C62-001F	ND	0.003	mg/L	UJ	ERPD-FD
Barium, Total	E 200.7	MKTF-09-22-21	2109C62-002F	0.18	0.003	mg/L	J+	ERPD-FD, HR-LCS
Barium, Total	E 200.7	STP-1-NW	2109C62-003F	0.086	0.003	mg/L	J+	ERPD-FD, HR-LCS
Barium, Total	E 200.7	OW-59	2109C62-004F	0.11	0.003	mg/L	J+	ERPD-FD, HR-LCS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Barium, Total	E 200.7	DUP-09-22-21	2109C62-006F	0.016	0.015	mg/L	J+	ERPD-FD, HR-LCS
Benzene	SW8260B	MKTF-09-22-21	2109c62-002a	0.29	1	µg/L	J+	HR-MS, MDLRL
Chloroform	SW8260B	MKTF-09-22-21	2109c62-002a	0.21	1	µg/L	J	MDLRL
Chromium, Total	E 200.7	MKTF-09-22-21	2109C62-002F	0.0022	0.006	mg/L	J	MDLRL
Copper, Dissolved	E200.8	MKTF-09-22-21	2109C62-002G	0.00098	0.001	mg/L	J	MDLRL
Copper, Total	E200.8	OW-59	2109C62-004F	0.0033	0.001	mg/L	JB	ERPD-FD, MBD
Copper, Total	E200.8	DUP-09-22-21	2109C62-006F	0.0012	0.001	mg/L	JB	ERPD-FD, MBD
Copper, Total	E200.8	MKTF-09-22-21	2109C62-002F	0.0027	0.001	mg/L	JB	MBD
Iron, Dissolved	E 200.7	OW-59	2109C62-004G	0.046	0.02	mg/L	J	ERPD-FD
Iron, Dissolved	E 200.7	DUP-09-22-21	2109C62-006G	0.016	0.02	mg/L	J	ERPD-FD, MDLRL
Iron, Total	E 200.7	MKTF-09-22-21	2109C62-002F	2.9	0.5	mg/L	J	ERPD-FD
Iron, Total	E 200.7	STP-1-NW	2109C62-003F	0.13	0.05	mg/L	J	ERPD-FD
Iron, Total	E 200.7	OW-59	2109C62-004F	3.6	0.5	mg/L	J	ERPD-FD
Iron, Total	E 200.7	DUP-09-22-21	2109C62-006F	0.42	0.25	mg/L	J	ERPD-FD
Iron, Total	E 200.7	EB-09-22-21	2109C62-001F	ND	0.05	mg/L	UJ	ERPD-FD
Lead, Total	E200.8	STP-1-NW	2109C62-003F	0.000089	0.0005	mg/L	J	MDLRL
Lead, Total	E200.8	OW-59	2109C62-004F	0.0021	0.0025	mg/L	J	MDLRL
Manganese, Dissolved	E 200.7	STP-1-NW	2109C62-003G	0.00077	0.002	mg/L	J	MDLRL
Manganese, Total	E 200.7	OW-59	2109C62-004F	0.14	0.002	mg/L	J	ERPD-FD
Manganese, Total	E 200.7	DUP-09-22-21	2109C62-006F	0.054	0.01	mg/L	J	ERPD-FD
Nitrogen, Nitrate	E300	OW-59	2109C62-004E	0.2	0.5	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	EB-09-22-21	2109C62-001E	0.07	0.1	mg/L	J	MDLRL
Phenol	SW8270C	STP-1-NW	2109c62-003d	ND	5.1	µg/L	R	LR-SUR
Phenol	SW8270C	OW-59	2109c62-004d	ND	5.7	µg/L	R	LR-SUR
Phenol	SW8270C	DUP-09-22-21	2109c62-006d	ND	6.6	µg/L	R	LR-SUR
Selenium, Dissolved	E200.8	OW-59	2109C62-004G	0.0024	0.005	mg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Selenium, Dissolved	E200.8	DUP-09-22-21	2109C62-006G	0.0027	0.001	mg/L	J	DIS-TOT
Selenium, Total	E200.8	OW-59	2109C62-004F	0.0028	0.005	mg/L	J	MDLRL
Selenium, Total	E200.8	DUP-09-22-21	2109C62-006F	ND	0.005	mg/L	UJ	DIS-TOT
Zinc, Dissolved	E 200.7	STP-1-NW	2109C62-003G	0.013	0.01	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	MKTF-09-22-21	2109C62-002G	0.008	0.01	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	EB-09-22-21	2109C62-001G	0.009	0.01	mg/L	J	MDLRL
Zinc, Total	E 200.7	MKTF-09-22-21	2109C62-002F	0.0069	0.01	mg/L	J	MDLRL
Zinc, Total	E 200.7	OW-59	2109C62-004F	0.0072	0.01	mg/L	J	MDLRL

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-002 Task: 0006	Sample Start Date: 12/16/2021
Date Validated: 02/07/2022	Sample End Date: 12/16/2021

Parameters Included:

- Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B
- 1,2-Dibromoethane (EDB) by EPA Method 504.1
- Semivolatile Organic Compounds (SVOC) by SW-846 Methods 8270C and 8270C with Selective Ion Monitoring (SIM)
- Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D
- TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified
- Total and Dissolved Metals by EPA Methods 200.7 and 200.8
- Total and Dissolved Mercury by EPA Method 245.1
- Anions by EPA Method 300.0
- Total Cyanide by EPA Method 335.4

Laboratory Project ID: 2112A87

Data Validator: Daran O'Hollearn, Lead Project Scientist

Reviewer: Mike Phillips, Senior Chemist

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, with additional data from Anatek Labs of Moscow, Idaho evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Equipment blanks

Tier II Data Validation Report Summary

- Field blanks

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
MKTF-24	2112A87-001
MKTF-2R	2112A87-002
MKTF-31	2112A87-003
MKTF-11	2112A87-004
MKTF-10	2112A87-005
PW-3	2112A87-006
DUP 12/16/2021	2112A87-007
EB 12/16/2021	2112A87-008
FB 12/16/2021	2112A87-009

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ○ Initial and Continuing Calibrations (Items 9 and 10)
- ✓ Laboratory Blanks (Items 11 and 12)
- ⊗ MS/MSD (Items 13 and 14)
- ⊗ LCS/LCSD (Items 15 and 16)
- ✓ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Equipment and Trip Blanks (Items 18 and 19)
- ⊗ Field Duplicates (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)
- ⊗ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
J+	The result is an estimated concentration, but may be biased high
U	Evaluated to be undetected at the reporting limit
JB	Estimated concentration due to blank contamination

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 612 data points. The data completeness calculation does not include any submitted blank sample results. Data points were not rejected. The data completeness measure for this data package is calculated to be 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST

1. Was the report free of non-conformances identified by the laboratory? No

Comments: The laboratory noted the following analytical non-conformances related to this data set.

Method 8270: Pyridine is reported with an "E" flag. The "E" flag is used to represent an estimated value. Pyridine was not detected in the sample, but the calibration curve for this compound did not meet the method requirements.

"S" flags denote that the sample surrogate or spike result is outside of the acceptable limits due to sample dilution or matrix interferences.

2. Were the data free of data qualification flags and/or notes used by the laboratory? If no, define. No

Comments: The laboratory used the following data qualification flags with this data set.

D – Sample Diluted Due to Matrix.

E – Estimated value. *This laboratory flag was applied only to QC sample results in the laboratory report, and qualification of sample data was not required.*

J – Analyte detected below quantitation limits.

S – % Recovery outside of range due to dilution or matrix interference.

* – Value exceeds Maximum Contaminant Level.

3. Were sample CoC forms and custody procedures complete? Yes

Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.

4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable? Yes

Comments: The detection limits appeared to be acceptable. The following dilutions were applied.

Method	Sample(s)	Analyte(s)	Dilution Factor
200.7	MKTF-24. MKTF-11, MKTF-10	Select Dissolved and Total Metals	5
200.8	MKTF-2R, MKTF-31, MKTF-11	Select Dissolved and Total Metals	5
300.0	MKTF-11, MKTF-10	Select Anions	5
504.1	MKTF-2R	1,2-Dibromoethane	5
8015D	MKTF-31	GRO	5
8260B	MKTF-31	VOCs	5
200.7	MKTF-24	Dissolved Manganese	10
200.7	MKTF-11	Total Iron, Total Manganese	10
8015D	MKTF-24, MKTF-11, MKTF-10	GRO	10
8260B	Multiple Samples	Select VOCs	10
8270C	Multiple Samples	Select SVOCs	10
200.7	MKTF-10	Select Dissolved and Total Metals	20
300.0	MKTF-24, MKTF-2R, MKTF-31	Select Anions	20
300.0	MKTF-31	Chloride	50
300.0	MKTF-24, MKTF-10	Chloride	100
8260B	MKTF-24, MKTF-11, MKTF-10	Select VOCs	100
300.0	MKTF-2R, MKTF-11	Chloride	200

VALIDATION CRITERIA CHECKLIST

5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC? Yes

Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.

6. Were samples received in good condition within method-specified requirements? No

Comments: Samples were received on ice, in good condition, and with the cooler temperatures both within and outside the recommended temperature range of 4°C ± 2°C between 4.1°C and 8.1°C as noted on the CoC and Sample Log-in Check List. Samples transferred to Anatek Labs of Moscow, Idaho were received in good condition with the cooler temperature within the recommended range at 2.0°C as noted on the Sample Receipt and Preservation Form.

The cooler temperature above 6°C was evaluated to be acceptable since the samples were received at the laboratory on the same day (within 24 hours) of the last sample collection time, and temperature equilibrium had not been established.

7. Were samples extracted/digested and analyzed within method-specified or technical holding times? Yes

Comments: The samples were extracted/digested and analyzed within method-specific holding times.

8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil. Yes

Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.

9. Did the laboratory provide any specific initial and/or continuing calibration results? No

Comments: Initial and continuing calibration data were not included as part of this data set.

10. If initial and/or continuing calibration results were provided, were the results within acceptable limits? N/A

Comments: Initial and continuing calibration data were not included as part of this data set.

11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.

12. Were target analytes reported as not detected in the laboratory blanks? Yes

Comments: Target analytes were reported as not detected in the laboratory blanks.

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batches. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
200.7	Total Metals	64647	Not Prepared
200.7	Total Metals	64648	MKTF-10
200.7	Dissolved Metals	B84630	EB 12/16/2021
200.8	Total Metals	64647	Not Prepared
200.8	Total Metals	64648	MKTF-11

VALIDATION CRITERIA CHECKLIST

Method	Analytes	Batch	MS Sample Source
200.8	Dissolved Metals	B84856	Not Prepared
200.8	Dissolved Metals	B84886	Not Prepared
245.1	Dissolved and Total Mercury	64708	EB 12/16/2021
245.1	Dissolved Mercury	64935	DUP 12/16/2021
300.0	Anions	R84637	EB 12/16/2021
300.0	Chloride	R84917	Not Prepared
335.4	Total Cyanide	R84938	PW-3
504.1	EDB	64602	Not Prepared
8015D	TPH DRO and MRO	64630	Not Prepared
8015D	TPH DRO and MRO	64698	Not Prepared
8015D	GRO	G84721	MKTF-2R
8015D	GRO	G84851	Not Prepared
8260B	VOCs	R84721	MKTF-24
8260B	1,1-Dichloroethene	R84759	Not Prepared
8260B	VOCs	R84851	Not Prepared
8270C	SVOCs	64594	Not Prepared
8270C	SVOCs	64659	Not Prepared
8270 SIM	SVOCs	64684	Not Prepared

Not Prepared – Matrix spikes were not prepared/reported for this batch.

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? No

Comments: The percent recoveries and RPDs for MS/MSDs prepared from project samples were within data validation and laboratory QC limits or were not applicable because the unspiked amount was more than four times the spike added, with the following exception.

The MS and MSD percent recoveries for GRO in Method 8015D batch G84721 were outside the QC limits of 70-130% at 144% and 131%, respectively. GRO detections in the associated samples were qualified as J+ to indicate estimated concentrations. Non-detections in the associated samples did not require qualification due to this non-conformance.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? No

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits, with the following exception.

The LCS recovery for total copper in Method 200.7 batch 64647 was outside the data validation acceptance limits of 70-130% at 139% indicating a potential high bias. Total copper was detected in the associated samples, and these results were qualified with J+ flags.

VALIDATION CRITERIA CHECKLIST

17. Were surrogate recoveries within laboratory QC limits? No

Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions.

Since Method 8270C and 8270 SIM surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes in a given fraction (acid or base/neutral) when two or more surrogates from the same fraction (acid or base/neutral) were outside the acceptance range. This condition did not exist for the samples MKTF-24 and MKTF-10, and qualification of sample data was not required.

The SVOC results for samples MKTF-10 and MKTF-11 were not qualified based on the surrogate non-conformances in the Method 8270 SIM analyses since the applied dilutions of 10 times for both of these samples resulted in surrogate concentrations below routinely calibrated levels, and those results were deemed unreliable and possibly inaccurate.

Qualification of sample data was not required based on surrogate non-conformances in QC samples as the environmental samples were evaluated based on their specific surrogate recoveries.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One field blank sample, FB 12/16/2021, and one equipment blank sample, EB 12/16/2021, were collected as part of this sample set.

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
FB 12/16/2021	**8260B**	**Acetone**	**4.2 µg/L**
EB 12/16/2021	**200.7**	**Dissolved Zinc**	**0.024 mg/L**
EB 12/16/2021	**300.0**	**Nitrate**	**0.031 mg/L**
EB 12/16/2021	**8260B**	**1,2,4-Trimethylbenzene**	**0.12 µg/L**
EB 12/16/2021	8260B	Acetone	3.9 µg/L

Detections of the identified analytes in the associated samples that were less than the blank results and/or less than the applicable reporting limits were assigned U qualifiers. Detections of the identified analytes in the associated samples that were greater than the reporting limits but less than 10 times the blank results were assigned JB qualifiers. Non-detections of the identified analytes in the associated samples and detections that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample DUP 12/16/2021 was collected as a field duplicate of sample PW-3.

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? No

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples, with the following exceptions.

The RPD values for total iron, dissolved zinc, total zinc, and total copper exceeded the data validation limit of 30% at 73.4%, 82.4%, 79.1%, and 100.0%, respectively, which was evidence of poor precision. These analyte results were qualified as J for samples PW-3 and DUP 12/16/2021.

VALIDATION CRITERIA CHECKLIST

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? N/A

Comments: Laboratory duplicate samples were not prepared for this sample set.

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? No

Comments: Target analytes were not reported by more than one method in this data set, with the following exceptions.

Target analytes 1,4-dichlorobenzene, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were reported by both Method 8260B and Method 8270C. These analytes were reported as not detected by both methods, or one or both results were within 5 times the applicable reporting limit, with the following exception.

The naphthalene results for sample MKTF-10 were detected by Method 8260B and 8270C at more than 5 times the applicable reporting limits. The difference was not within the variability of the analytical methods, with an RPD% of 42.9%. Given the differences between the findings, the results were assigned J qualifiers.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
MKTF-24	Mercury	ND	0.00015	0.0002	mg/L	----- ♦
MKTF-10	Uranium	0.00043	0.00044	0.0005	mg/L	2.3% ♦
MKTF-24	Zinc	ND	0.011	0.010	mg/L	----- ♦
MKTF-2R	Zinc	0.0088	0.017	0.010	mg/L	63.6% ♦
MKTF-31	Zinc	ND	0.0080	0.010	mg/L	----- ♦
MKTF-11	Zinc	ND	0.010	0.010	mg/L	----- ♦
MKTF-10	Zinc	0.0071	0.010	0.010	mg/L	33.9% ♦
PW-3	Zinc	0.0091	0.015	0.010	mg/L	49.0% ♦
DUP 12/16/2021	Zinc	0.021	0.036	0.010	mg/L	52.6% ♦
EB 12/16/2021	Zinc	ND	0.024	0.010	mg/L	----- ♦

----- *RPD could not be calculated.*

♦ *= One or both of the detections were less than 2 times the applicable reporting limits and qualification of data was not required.*

The differences for the corresponding analytical results were within five times the applicable reporting limits, and validation action was not required.

FIELD DUPLICATE SUMMARY

Client Sample ID: PW-3 Field Duplicate Sample ID: DUP 12/16/2021				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Barium, Dissolved	E 200.7	0.012 mg/L	0.012 mg/L	0.0%
Barium, Total	E 200.7	0.013 mg/L	0.013 mg/L	0.0%
Iron, Dissolved	E 200.7	0.049 mg/L	0.050 mg/L	2.0%
Iron, Total	**E 200.7**	**0.088 mg/L**	**0.19 mg/L**	**73.4%**
Manganese, Dissolved	E 200.7	0.011 mg/L	0.011 mg/L	0.0%
Manganese, Total	E 200.7	0.015 mg/L	0.016 mg/L	6.5%
Zinc, Dissolved	**E 200.7**	**0.015 mg/L**	**0.036 mg/L**	**82.4%**
Zinc, Total	**E 200.7**	**0.0091 mg/L**	**0.021 mg/L**	**79.1%**
Arsenic, Dissolved	E200.8	0.0032 mg/L	0.0033 mg/L	3.1%
Arsenic, Total	E200.8	0.0035 mg/L	0.0035 mg/L	0.0%
Copper, Dissolved	E200.8	ND (0.0010 mg/L)	0.00040 mg/L	DL
Copper, Total	**E200.8**	**0.0015 mg/L**	**0.0045 mg/L**	**100.0%**
Lead, Total	E200.8	0.000092 mg/L	0.00028 mg/L	101.1% +/-RL
Selenium, Dissolved	E200.8	0.00062 mg/L	0.00088 mg/L	34.7% +/-RL
Selenium, Total	E200.8	0.00096 mg/L	0.00092 mg/L	4.3% +/-RL
Uranium, Dissolved	E200.8	0.0014 mg/L	0.0014 mg/L	0.0%
Uranium, Total	E200.8	0.0015 mg/L	0.0015 mg/L	0.0%
Mercury, Total	E245.1	0.00016 mg/L	ND (0.00020 mg/L)	DL
TPH GRO	SW8015	0.014 mg/L	ND (0.050 mg/L)	DL
1,2,4-Trimethylbenzene	SW8260B	0.33 µg/L	ND (1.0 µg/L)	DL
Benzene	SW8260B	0.34 µg/L	ND (1.0 µg/L)	DL
Ethylbenzene	SW8260B	0.23 µg/L	ND (1.0 µg/L)	DL
Xylenes, Total	SW8260B	0.94 µg/L	ND (1.5 µg/L)	DL

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD values for total iron, dissolved zinc, total zinc, and total copper exceeded the data validation limit of 30% at 73.4%, 82.4%, 79.1%, and 100.0%, respectively, which was evidence of poor precision. These analyte results were qualified as J for samples PW-3 and DUP 12/16/2021.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
DATA-COMP	Analytical results for analyte by different methods did not meet comparability limits.
EBD	Equipment blank detection
ERPD-FD	High field duplicate RPD.
FBD	Field blank detection
HR-LCS	The LCS and/or LCSD percent recovery was greater than the upper acceptable limit indicating a possible high bias.
HR-MS	The MS and/or MSD percent recovery was greater than the upper acceptable limit indicating possible matrix interference.
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,1,1-Trichloroethane	SW8260B	MKTF-2R	2112a87-002a	0.80	1.0	µg/L	J	MDLRL
1,1,1-Trichloroethane	SW8260B	MKTF-31	2112a87-003a	2.3	5.0	µg/L	J	MDLRL
1,1,2-Trichloroethane	SW8260B	MKTF-31	2112a87-003a	2.4	5.0	µg/L	J	MDLRL
1,1,2-Trichloroethane	SW8260B	MKTF-11	2112a87-004a	3.2	10	µg/L	J	MDLRL
1,1-Dichloroethene	SW8260B	MKTF-24	2112a87-001a	4.6	10	µg/L	J	MDLRL
1,2,4-Trimethylbenzene	SW8260B	MKTF-24	2112a87-001a	2.2	10	µg/L	U	EBD, MDLRL
1,2,4-Trimethylbenzene	SW8260B	MKTF-2R	2112a87-002a	0.15	1.0	µg/L	U	EBD, MDLRL
1,2,4-Trimethylbenzene	SW8260B	MKTF-31	2112a87-003a	0.67	5.0	µg/L	U	EBD, MDLRL
1,2,4-Trimethylbenzene	SW8260B	PW-3	2112a87-006a	0.33	1.0	µg/L	U	EBD, MDLRL
1,2,4-Trimethylbenzene	SW8260B	EB 12/16/2021	2112a87-008a	0.12	1.0	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	MKTF-11	2112a87-004a	4.3	10	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	MKTF-10	2112a87-005a	3.9	10	µg/L	J	MDLRL
1,2-Dichloropropane	SW8260B	MKTF-2R	2112a87-002a	0.38	1.0	µg/L	J	MDLRL
1,4-Dioxane	SW8270C	MKTF-11	2112a87-004d	6.6	10	µg/L	J	MDLRL
2,4-Dimethylphenol	SW8270C	MKTF-11	2112A87-004D	3.9	7.1	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
2-Methylphenol	SW8270C	MKTF-11	2112A87-004D	1.9	7.1	µg/L	J	MDLRL
2-Methylphenol	SW8270C	MKTF-10	2112A87-005D	2.3	5.0	µg/L	J	MDLRL
Acetone	SW8260B	MKTF-2R	2112a87-002a	11	10	µg/L	JB	FBD
Acetone	SW8260B	EB 12/16/2021	2112a87-008a	3.9	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	FB 12/16/2021	2112a87-009a	4.2	10	µg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-2R	2112A87-002G	0.0023	0.0050	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-31	2112A87-003G	0.00053	0.0010	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-2R	2112A87-002F	0.0030	0.0050	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-31	2112A87-003F	0.00072	0.0010	mg/L	J	MDLRL
Benzene	SW8260B	MKTF-31	2112a87-003a	1.3	5.0	µg/L	J	MDLRL
Benzene	SW8260B	PW-3	2112a87-006a	0.34	1.0	µg/L	J	MDLRL
Carbazole	SW8270C	MKTF-10	2112A87-005D	1.1	5.0	µg/L	J	MDLRL
Chloroethane	SW8260B	MKTF-31	2112a87-003a	2.1	10	µg/L	J	MDLRL
Chloroform	SW8260B	MKTF-2R	2112a87-002a	0.94	10	µg/L	J	MDLRL
Chloroform	SW8260B	MKTF-11	2112a87-004a	2.5	10	µg/L	J	MDLRL
Chloroform	SW8260B	MKTF-10	2112a87-005a	4.1	10	µg/L	J	MDLRL
Chloromethane	SW8260B	MKTF-31	2112a87-003a	3.2	15	µg/L	J	MDLRL
cis-1,2-Dichloroethene	SW8260B	MKTF-31	2112a87-003a	3.2	5.0	µg/L	J	MDLRL
cis-1,2-Dichloroethene	SW8260B	MKTF-10	2112a87-005a	7.2	10	µg/L	J	MDLRL
Copper, Dissolved	E200.8	MKTF-31	2112A87-003G	0.00087	0.0010	mg/L	J	MDLRL
Copper, Dissolved	E200.8	DUP 12/16/2021	2112A87-007G	0.00040	0.0010	mg/L	J	MDLRL
Copper, Total	E200.8	MKTF-31	2112A87-003F	0.0023	0.0010	mg/L	J+	HR-LCS
Copper, Total	E200.8	MKTF-24	2112A87-001F	0.0008	0.0010	mg/L	J+	HR-LCS, MDLRL
Copper, Total	E200.8	MKTF-2R	2112A87-002F	0.0026	0.0050	mg/L	J+	HR-LCS, MDLRL
Copper, Total	E200.8	PW-3	2112A87-006F	0.0015	0.0010	mg/L	J	ERPD-FD
Copper, Total	E200.8	DUP 12/16/2021	2112A87-007F	0.0045	0.0010	mg/L	J	ERPD-FD
Di-n-octylphthalate	SW8270C	MKTF-2R	2112A87-002D	3.1	20	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Ethylbenzene	SW8260B	PW-3	2112a87-006a	0.23	1.0	µg/L	J	MDLRL
Iron, Total	E 200.7	PW-3	2112A87-006F	0.088	0.050	mg/L	J	ERPD-FD
Iron, Total	E 200.7	DUP 12/16/2021	2112A87-007F	0.19	0.050	mg/L	J	ERPD-FD
Isopropylbenzene	SW8260B	MKTF-2R	2112a87-002a	0.91	1.0	µg/L	J	MDLRL
Isopropylbenzene	SW8260B	MKTF-11	2112a87-004a	7.0	10	µg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-31	2112A87-003G	0.000080	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-2R	2112A87-002F	0.00051	0.0025	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-31	2112A87-003F	0.00048	0.0005	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-11	2112A87-004F	0.00047	0.0025	mg/L	J	MDLRL
Lead, Total	E200.8	PW-3	2112A87-006F	0.000092	0.0005	mg/L	J	MDLRL
Lead, Total	E200.8	DUP 12/16/2021	2112A87-007F	0.00028	0.0005	mg/L	J	MDLRL
Mercury, Dissolved	E245.1	MKTF-24	2112A87-001G	0.00015	0.0002	mg/L	J	MDLRL
Mercury, Total	E245.1	PW-3	2112A87-006F	0.00016	0.0002	mg/L	J	MDLRL
Methylene Chloride	SW8260B	MKTF-2R	2112a87-002a	0.85	3.0	µg/L	J	MDLRL
MTBE	SW8260B	MKTF-10	2112a87-005a	8.0	10	µg/L	J	MDLRL
Naphthalene	SW8260B	MKTF-10	2112a87-005a	170	20	µg/L	J	DATA-COMP
Naphthalene	SW8270C	MKTF-10	2112a87-005d	110	1.0	µg/L	J	DATA-COMP
n-Butylbenzene	SW8260B	MKTF-24	2112a87-001a	9.0	30	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-10	2112a87-005a	12	30	µg/L	J	MDLRL
Nitrogen, Nitrate	E300	MKTF-24	2112A87-001E	0.17	0.10	mg/L	JB	EBD
Nitrogen, Nitrate	E300	MKTF-2R	2112A87-002E	0.071	0.10	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	MKTF-11	2112A87-004E	0.086	0.5	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	EB 12/16/2021	2112A87-008E	0.031	0.10	mg/L	J	MDLRL
n-Propylbenzene	SW8260B	MKTF-2R	2112a87-002a	0.20	1.0	µg/L	J	MDLRL
n-Propylbenzene	SW8260B	MKTF-11	2112a87-004a	9.5	10	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	MKTF-24	2112a87-001a	2.4	10	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	MKTF-10	2112a87-005a	8.0	10	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
sec-Butylbenzene	SW8260B	MKTF-24	2112a87-001a	6.8	10	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-2R	2112a87-002a	0.18	1.0	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-11	2112a87-004a	3.3	10	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-10	2112a87-005a	5.7	10	µg/L	J	MDLRL
Selenium, Dissolved	E200.8	PW-3	2112A87-006G	0.00062	0.0010	mg/L	J	MDLRL
Selenium, Dissolved	E200.8	DUP 12/16/2021	2112A87-007G	0.00088	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-10	2112A87-005F	0.00045	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	PW-3	2112A87-006F	0.00096	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	DUP 12/16/2021	2112A87-007F	0.00092	0.0010	mg/L	J	MDLRL
TPH GRO	SW8015	MKTF-24	2112a87-001a	12	0.5	mg/L	J+	HR-MS
TPH GRO	SW8015	MKTF-2R	2112a87-002a	0.54	0.050	mg/L	J+	HR-MS
TPH GRO	SW8015	MKTF-31	2112a87-003a	0.43	0.25	mg/L	J+	HR-MS
TPH GRO	SW8015	MKTF-11	2112a87-004a	12	0.50	mg/L	J+	HR-MS
TPH GRO	SW8015	MKTF-10	2112a87-005a	37	0.50	mg/L	J+	HR-MS
TPH GRO	SW8015	PW-3	2112a87-006a	0.014	0.050	mg/L	J+	HR-MS, MDLRL
Uranium, Dissolved	E200.8	MKTF-10	2112A87-005G	0.00044	0.00050	mg/L	J	MDLRL
Uranium, Total	E200.8	MKTF-10	2112A87-005F	0.00043	0.00050	mg/L	J	MDLRL
Xylenes, Total	SW8260B	MKTF-24	2112a87-001a	7.7	15	µg/L	J	MDLRL
Xylenes, Total	SW8260B	PW-3	2112a87-006a	0.94	1.5	µg/L	J	MDLRL
Zinc, Dissolved	E 200.7	MKTF-24	2112A87-001G	0.011	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	MKTF-2R	2112A87-002G	0.017	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	MKTF-11	2112A87-004G	0.010	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	MKTF-10	2112A87-005G	0.010	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	DUP 12/16/2021	2112A87-007G	0.036	0.010	mg/L	JB	EBD, ERPD-FD
Zinc, Dissolved	E 200.7	PW-3	2112A87-006G	0.015	0.010	mg/L	U	EBD, ERPD-FD
Zinc, Dissolved	E 200.7	MKTF-31	2112A87-003G	0.0080	0.010	mg/L	U	EBD, MDLRL
Zinc, Total	E 200.7	DUP 12/16/2021	2112A87-007F	0.021	0.010	mg/L	J	ERPD-FD

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Zinc, Total	E 200.7	PW-3	2112A87-006F	0.0091	0.010	mg/L	J	ERPD-FD, MDLRL
Zinc, Total	E 200.7	MKTF-2R	2112A87-002F	0.0088	0.010	mg/L	J	MDLRL
Zinc, Total	E 200.7	MKTF-10	2112A87-005F	0.0071	0.010	mg/L	J	MDLRL

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-002 Task: 0006	Sample Start Date: 12/17/2021
Date Validated: 02/10/2022	Sample End Date: 12/17/2021
Parameters Included: ▪ Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B ▪ 1,2-Dibromoethane (EDB) by EPA Method 504.1 ▪ Semivolatile Organic Compounds (SVOC) by SW-846 Methods 8270C and 8270C with Selective Ion Monitoring (SIM) ▪ Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D ▪ TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified ▪ Total and Dissolved Metals by EPA Methods 200.7 and 200.8 ▪ Total and Dissolved Mercury by EPA Method 245.1 ▪ Anions by EPA Method 300.0 ▪ Per- and Polyfluorinated Alkyl Substances (PFAS) by Liquid Chromatography with Tandem Mass Spectrometry (LC-MS/MS) and Isotope Dilution (ID)	
Laboratory Project ID: 2112B70	
Data Validator: Daran O'Hollearn, Lead Project Scientist	
Reviewer: Mike Phillips, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, with additional data from Vista Analytical Laboratory of El Dorado Hills, California, evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Tier II Data Validation Report Summary

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Equipment blanks
- Field blanks
- Trip blanks

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
OW-63	2112B70-001
MKTF-25	2112B70-002
MKTF-40	2112B70-003
West LDU	2112B70-004
East LDU	2112B70-005
DUP 12/17/2021	2112B70-006
EB 12/17/2021	2112B70-007
FB PFAS	2112B70-009
Trip Blank	2112B70-010

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ⊗ Holding Times and Preservation (Items 6 and 7)
- ⊗ Initial and Continuing Calibrations (Items 9 and 10)
- ✓ Laboratory Blanks (Items 11 and 12)
- ✓ MS/MSD (Items 13 and 14)
- ✓ LCS/LCSD (Items 15 and 16)
- ✓ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Field, Equipment, and Trip Blanks (Items 18 and 19)
- ⊗ Field Duplicates (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)
- ✓ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537, United States Environmental Protection Agency (USEPA), document number EPA 910-R-18-001, November 2018.
- Data Validation Guidelines Module 3: Data Validation Procedure for Per- and Polyfluoroalkyl Substances Analysis by QSM Table B-15, United States Department of Defense, Environmental Data Quality Workgroup, May 1, 2020.
- General Data Validation Guidelines, United States Department of Defense, Environmental Data Quality Workgroup, November 4, 2019.

Tier II Data Validation Report Summary

- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
UJ	Estimated reporting limit
U	Evaluated to be undetected at the reporting limit
JB	Estimated concentration due to blank contamination
R	Rejected, data not usable

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 447 data points. The data completeness calculation does not include any submitted blank sample results. Three data points were rejected. The data completeness measure for this data package is calculated to be 99.33% and is acceptable.

VALIDATION CRITERIA CHECKLIST

1. Was the report free of non-conformances identified by the laboratory? No

Comments: The laboratory noted the following analytical non-conformances related to this data set.

Method 8270: Pyridine is reported with an "E" flag. The "E" flag is used to represent an estimated value. Pyridine was not detected in the sample, but the calibration curve for this compound did not meet the method requirements.

“S" flags denote that the sample surrogate or spike result is outside of the acceptable limits due to sample dilution or matrix interferences.

2. Were the data free of data qualification flags and/or notes used by the laboratory? If no, define. No

Comments: The laboratory used the following data qualification flags with this data set.

E – Estimated value.

J – Analyte detected below quantitation limits.

S – % Recovery outside of range due to dilution or matrix.

* – Value exceeds Maximum Contaminant Level.

3. Were sample CoC forms and custody procedures complete? Yes

Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.

4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable? Yes

Comments: The detection limits appeared to be acceptable. The following dilutions were applied.

Method	Sample(s)	Analyte(s)	Dilution Factor
8015D	West LDU	GRO	2
8260B	West LDU	VOCs	2
200.7	OW-63, MKTF-25	Select Total Metals	5
200.8	Multiple Samples	Select Dissolved and Total Metals	5
300.0	OW-63, MKTF-25, MKTF-40	Select Anions	5
200.7	OW-63, MKTF-25, East LDU	Select Dissolved and Total Metals	10
200.8	MKTF-40	Total Copper	10
8015D	MKTF-25, East LDU	GRO	10
8260B	MKTF-25, East LDU	VOCs	10
8270C	OW-63	1-Methylnaphthalene, 2-Methylnaphthalene	10
8270C	MKTF-25	1,4-Dioxane	10
200.7	West LDU, East LDU, DUP 12/17/2021	Dissolved and Total Manganese	20
200.8	West LDU, East LDU, DUP 12/17/2021	Select Dissolved and Total Metals	20
300.0	MKTF-40	Nitrate+Nitrite as N, Sulfate	20
8270C	OW-63	Naphthalene	20
300.0	MKTF-25	Chloride	50
8015D	OW-63	GRO	50
8260B	OW-63	VOCs	50
200.7	West LDU, DUP 12/17/2021	Dissolved and Total Iron	500

VALIDATION CRITERIA CHECKLIST

Method	Sample(s)	Analyte(s)	Dilution Factor
300.0	MKTF-40	Chloride	500
8260B	OW-63	Benzene	500
200.7	East LDU	Dissolved Iron	1,000
200.7	East LDU	Total Iron	2,000

5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC? Yes

Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.

6. Were samples received in good condition within method-specified requirements? No

Comments: Samples were received on ice, in good condition, and with the cooler temperatures within the recommended temperature range of 4°C ± 2°C between 3.3°C and 5.8°C as noted on the CoC and Sample Log-in Check List. Samples transferred to Vista Analytical Laboratories of El Dorado Hills, California were received in good condition with the cooler temperature outside the recommended range at 0.4°C as noted on the Sample Log-In Checklist.

The cooler temperature below 2.0°C was judged as acceptable since the laboratory did not report the sample containers as broken or frozen.

7. Were samples extracted/digested and analyzed within method-specified or technical holding times? No

Comments: The samples were extracted/digested and analyzed within method-specific holding times, with the following exceptions.

Method 300.0: Samples OW-63, MKTF-25, and MKTF-40 were analyzed for nitrate and nitrite outside the defined holding time of 48 hours by approximately 1 day and 17 days. Nitrate and nitrate were not detected in samples OW-63, MKTF-25, and MKTF-40. These results were assigned R to indicate that the data were rejected due to the holding time being exceeded.

8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil. Yes

Comments: The results were reported in concentration units of nanograms per liter (ng/L), micrograms per liter (µg/L), and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.

9. Did the laboratory provide any specific initial and/or continuing calibration results? No

Comments: Detailed initial and continuing calibration data were not included as part of this data set.

10. If initial and/or continuing calibration results were provided, were the results within acceptable limits? No

Comments: Detailed initial and continuing calibration data were not included as part of this data set.

For sample MKTF-40, the laboratory applied the E qualifier to the pyridine result in Method 8270C indicating that this compound was recovered outside the laboratory acceptance limits for the continuing calibration. Pyridine was not detected in sample MKTF-40, and this result was qualified with a UJ flag.

11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.

VALIDATION CRITERIA CHECKLIST

12. Were target analytes reported as not detected in the laboratory blanks? Yes

Comments: Target analytes were reported as not detected in the laboratory blanks.

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batches. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
200.7	Total Metals	64661	Not Prepared
200.7	Dissolved Metals	A84736	EB 12/17/2021
200.8	Total Metals	64661	OW-3, MKTF-25
200.8	Dissolved Metals	A84953	Not Prepared
200.8	Dissolved Uranium	A84995	Not Prepared
200.8	Dissolved Metals	B84856	Not Prepared
200.8	Dissolved Metals	B84886	Not Prepared
245.1	Total Mercury	64935	Not Prepared
245.1	Dissolved and Total Mercury	64979	Not Prepared
300.0	Anions	A84688	Not Prepared
300.0	Chloride	R84924	Not Prepared
300.0	Nitrate+Nitrite as N	R84955	Not Prepared
504.1	EDB	64767	Not Prepared
PFAS Method	PFAS	B1L0170	Not Prepared
8015D	TPH DRO and MRO	64698	Not Prepared
8015D	GRO	G84721	Not Prepared
8015D	GRO	G84851	Not Prepared
8260B	VOCs	R84721	Not Prepared
8260B	VOCs	R84759	West LDU
8260B	VOCs	R84851	Not Prepared
8270C	SVOCs	64659	Not Prepared
8270 SIM	SVOCs	64693	Not Prepared

Not Prepared – Matrix spikes were not prepared/reported for this batch.

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? Yes

Comments: The percent recoveries and RPDs for MS/MSDs prepared from project samples were within data validation and laboratory QC limits.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

VALIDATION CRITERIA CHECKLIST

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? Yes

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits.

17. Were surrogate recoveries within laboratory QC limits? No

Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions.

Since Method 8270 SIM surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes in a given fraction (acid or base/neutral) when two or more surrogates from the same fraction (acid or base/neutral) were outside the acceptance range. This condition did not exist for the samples OW-63 and MKTF-25, and qualification of sample data was not required.

Qualification of sample data was not required based on surrogate non-conformances in QC samples as the environmental samples were evaluated based on their specific surrogate recoveries.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One trip blank sample, Trip Blank, one field blank sample, FB PFAS, and one equipment blank sample, EB 12/17/2021, were collected as part of this sample set.

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
Trip Blank	8260B	Chloromethane	0.43 µg/L
EB 12/17/2021	**200.7**	**Dissolved Zinc**	**0.012 mg/L**
EB 12/17/2021	**8015D**	**DRO**	**0.018 mg/L**
EB 12/17/2021	**8260B**	**Acetone**	**4.1 µg/L**

Detections of the identified analytes in the associated samples that were less than the blank results and/or less than the applicable reporting limits were assigned U qualifiers. Detections of the identified analytes in the associated samples that were greater than the reporting limits but less than 10 times the blank results were assigned JB qualifiers. Non-detections of the identified analytes in the associated samples and detections that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample DUP 12/17/2021 was collected as a field duplicate of sample West LDU.

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? No

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples, with the following exception.

The RPD value for total chromium exceeded the data validation limit of 30% at 59.7%, which was evidence of poor precision. The total chromium results were qualified as J for samples West LDU and DUP 12/17/2021.

VALIDATION CRITERIA CHECKLIST

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? N/A

Comments: Laboratory duplicate samples were not prepared for this sample set.

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? Yes

Comments: Target analytes were not reported by more than one method in this data set, with the following exceptions.

Target analytes 1,4-dichlorobenzene, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were reported by both Method 8260B and Method 8270C. These analytes were reported as not detected by both methods, or one or both results were within 5 times the applicable reporting limit. Qualification of data was not required.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
East LDU	Cadmium	0.051	0.052	0.0020 / 0.0020	mg/L	1.9%
MKTF-40	Copper	ND	0.00070	0.010 / 0.0010	mg/L	----- ♦
East LDU	Iron	970	990	100 / 20	mg/L	2.0%
OW-63	Uranium	ND	0.00031	0.00050 / 0.00050	mg/L	----- ♦
West LDU	Uranium	ND	0.00035	0.00050 / 0.0025	mg/L	----- ♦
OW-63	Zinc	ND	0.020	0.010 / 0.010	mg/L	----- ♦
MKTF-25	Zinc	ND	0.0075	0.010 / 0.010	mg/L	----- ♦
MKTF-40	Zinc	ND	0.0074	0.010 / 0.010	mg/L	----- ♦
West LDU	Zinc	ND	0.013	0.010 / 0.010	mg/L	----- ♦
DUP 12/17/2021	Zinc	ND	0.0055	0.010 / 0.010	mg/L	----- ♦
EB 12/17/2021	Zinc	ND	0.012	0.010 / 0.010	mg/L	----- ♦

----- *RPD could not be calculated.*

♦ *= One or both of the detections were less than 2 times the applicable reporting limits, and qualification of data was not required.*

The differences for the corresponding analytical results were within five times the applicable reporting limits and validation action was not required, or the differences between the results were less than 30% indicating that the data were within the measurement uncertainty for the methods and qualification of results was not required based on the analytical inconsistencies.

FIELD DUPLICATE SUMMARY

Client Sample ID: West LDU Field Duplicate Sample ID: DUP 12/17/2021				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Barium, Dissolved	E 200.7	0.074 mg/L	0.074 mg/L	0.0%
Barium, Total	E 200.7	0.088 mg/L	0.079 mg/L	10.8%
Cadmium, Dissolved	E 200.7	0.013 mg/L	0.013 mg/L	0.0%
Cadmium, Total	E 200.7	0.016 mg/L	0.013 mg/L	20.7%
Chromium, Dissolved	E 200.7	0.14 mg/L	0.13 mg/L	7.4%
Chromium, Total	**E 200.7**	**0.50 mg/L**	**0.27 mg/L**	**59.7%**
Iron, Dissolved	E 200.7	250 mg/L	270 mg/L	7.7%
Iron, Total	E 200.7	330 mg/L	300 mg/L	9.5%
Manganese, Dissolved	E 200.7	15 mg/L	16 mg/L	6.5%
Manganese, Total	E 200.7	15 mg/L	16 mg/L	6.5%
Zinc, Dissolved	E 200.7	0.013 mg/L	0.0055 mg/L	81.1% +/-RL
Uranium, Dissolved	E200.8	0.00035 mg/L	ND (0.010 mg/L)	DL
TPH DRO	SW8015	1.6 mg/L	1.6 mg/L	0.0%
TPH GRO	SW8015	0.20 mg/L	0.16 mg/L	22.2%
1,2,4-Trimethylbenzene	SW8260B	1.5 µg/L	1.4 µg/L	6.9% +/-RL
1,3,5-Trimethylbenzene	SW8260B	4.4 ug/L	4.2 ug/L	4.7%
Acetone	SW8260B	ND (20 µg/L)	5.0 µg/L	DL
Benzene	SW8260B	7.0 µg/L	6.9 µg/L	1.4%
Ethylbenzene	SW8260B	5.1 µg/L	5.0 µg/L	2.0%
Isopropylbenzene	SW8260B	0.89 µg/L	0.88 ug/L	1.1% +/-RL
MTBE	SW8260B	5.2 µg/L	5.2 ug/L	0.0%
Naphthalene	SW8260B	ND (4.0 µg/L)	0.77 µg/L	DL
n-Propylbenzene	SW8260B	0.79 µg/L	0.68 µg/L	15.0% +/-RL
p-Isopropyltoluene	SW8260B	0.50 µg/L	0.42 µg/L	17.4% +/-RL
sec-Butylbenzene	SW8260B	0.47 µg/L	0.34 µg/L	32.1% +/-RL
Toluene	SW8260B	0.65 µg/L	0.66 µg/L	1.5% +/-RL
Xylenes, Total	SW8260B	ND (3.0 µg/L)	0.73 µg/L	DL

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD value for total chromium exceeded the data validation limit of 30% at 59.7%, which was evidence of poor precision. The total chromium results were qualified as J for samples West LDU and DUP 12/17/2021.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
EBD	Equipment blank detection
ERPD-FD	High field duplicate RPD.
HDRRF	The %D between the initial calibration RRF and the opening CCV RRF was outside the acceptable limits.
HT-AN	Sample was analyzed outside of the method holding time.
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,1,2-Trichloroethane	SW8260B	MKTF-25	2112b70-002a	2.4	10	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	OW-63	2112b70-001a	29	50	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	MKTF-40	2112b70-003a	0.84	1.0	µg/L	J	MDLRL
1,2,4-Trimethylbenzene	SW8260B	MKTF-25	2112b70-002a	1.4	10	µg/L	J	MDLRL
1,2,4-Trimethylbenzene	SW8260B	MKTF-40	2112b70-003a	0.16	1.0	µg/L	J	MDLRL
1,2,4-Trimethylbenzene	SW8260B	West LDU	2112b70-004a	1.5	2.0	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	MKTF-40	2112b70-003a	0.43	1.0	µg/L	J	MDLRL
1-Methylnaphthalene	SW8260B	OW-63	2112b70-001a	77	200	µg/L	J	MDLRL
2,4-Dimethylphenol	SW8270C	OW-63	2112B70-001D	3.1	5.0	µg/L	J	MDLRL
2-Butanone	SW8260B	East LDU	2112b70-005a	24	100	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	OW-63	2112b70-001a	120	200	µg/L	J	MDLRL
Acetone	SW8260B	DUP 12/17/2021	2112b70-006a	5.0	10	µg/L	U	EBD, MDLRL
Acetone	SW8260B	EB 12/17/2021	2112b70-007a	4.1	10	µg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-40	2112B70-003G	0.00065	0.0010	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-40	2112B70-003F	0.00088	0.0050	mg/L	J	MDLRL
Carbazole	SW8270C	OW-63	2112B70-001D	4.7	5.0	µg/L	J	MDLRL
Chloroform	SW8260B	MKTF-25	2112b70-002a	1.8	10	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Chloromethane	SW8260B	Trip Blank	2112b70-010a	0.43	3.0	µg/L	J	MDLRL
Chromium, Total	E 200.7	West LDU	2112B70-004C	0.50	0.0060	mg/L	J	ERPD-FD
Chromium, Total	E 200.7	DUP 12/17/2021	2112B70-006C	0.27	0.0060	mg/L	J	ERPD-FD
Copper, Dissolved	E200.8	MKTF-25	2112B70-002G	0.00083	0.0010	mg/L	J	MDLRL
Copper, Dissolved	E200.8	MKTF-40	2112B70-003G	0.00070	0.0010	mg/L	J	MDLRL
Isopropylbenzene	SW8260B	MKTF-25	2112b70-002a	4.3	10	µg/L	J	MDLRL
Isopropylbenzene	SW8260B	West LDU	2112b70-004a	0.89	2.0	µg/L	J	MDLRL
Isopropylbenzene	SW8260B	East LDU	2112b70-005a	7.3	10	µg/L	J	MDLRL
Isopropylbenzene	SW8260B	DUP 12/17/2021	2112b70-006a	0.88	1.0	µg/L	J	MDLRL
Lead, Total	E200.8	OW-63	2112B70-001F	0.000094	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-25	2112B70-002F	0.00036	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-40	2112B70-003F	0.00083	0.0025	mg/L	J	MDLRL
Manganese, Dissolved	E 200.7	MKTF-40	2112B70-003G	0.00088	0.002	mg/L	J	MDLRL
MTBE	SW8260B	OW-63	2112b70-001a	21	50	µg/L	J	MDLRL
Naphthalene	SW8260B	East LDU	2112b70-005a	10	20	µg/L	J	MDLRL
Naphthalene	SW8260B	DUP 12/17/2021	2112b70-006a	0.77	2.0	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	OW-63	2112b70-001a	23	150	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	East LDU	2112b70-005a	2.8	30	µg/L	J	MDLRL
Nitrate & Nitrite	E300	OW-63	2112B70-001E	ND	1.0	mg/L	R	HT-AN
Nitrate & Nitrite	E300	MKTF-25	2112B70-002E	ND	1.0	mg/L	R	HT-AN
Nitrate & Nitrite	E300	MKTF-40	2112B70-003E	ND	4.0	mg/L	R	HT-AN
n-Propylbenzene	SW8260B	MKTF-25	2112b70-002a	2.2	10	µg/L	J	MDLRL
n-Propylbenzene	SW8260B	West LDU	2112b70-004a	0.79	2.0	µg/L	J	MDLRL
n-Propylbenzene	SW8260B	East LDU	2112b70-005a	9.7	10	µg/L	J	MDLRL
n-Propylbenzene	SW8260B	DUP 12/17/2021	2112b70-006a	0.68	1.0	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	West LDU	2112b70-004a	0.50	2.0	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	East LDU	2112b70-005a	3.6	10	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
p-Isopropyltoluene	SW8260B	DUP 12/17/2021	2112b70-006a	0.42	1.0	µg/L	J	MDLRL
Pyridine	SW8270C	MKTF-40	2112B70-003D	ND	5.0	µg/L	UJ	HDRRF
sec-Butylbenzene	SW8260B	OW-63	2112b70-001a	14	50	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-25	2112b70-002a	1.7	10	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	West LDU	2112b70-004a	0.47	2.0	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	East LDU	2112b70-005a	4.1	10	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	DUP 12/17/2021	2112b70-006a	0.34	1.0	µg/L	J	MDLRL
Selenium, Dissolved	E200.8	MKTF-25	2112B70-002G	0.00044	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	OW-63	2112B70-001F	0.00039	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-25	2112B70-002F	0.00077	0.0010	mg/L	J	MDLRL
Toluene	SW8260B	MKTF-25	2112b70-002a	2.1	10	µg/L	J	MDLRL
Toluene	SW8260B	West LDU	2112b70-004a	0.65	2.0	µg/L	J	MDLRL
Toluene	SW8260B	East LDU	2112b70-005a	5.6	10	µg/L	J	MDLRL
Toluene	SW8260B	DUP 12/17/2021	2112b70-006a	0.66	1.0	µg/L	J	MDLRL
TPH DRO	SW8015	MKTF-40	2112B70-003C	0.044	0.064	mg/L	U	EBD, MDLRL
TPH DRO	SW8015	EB 12/17/2021	2112B70-007B	0.018	0.064	mg/L	J	MDLRL
Uranium, Dissolved	E200.8	OW-63	2112B70-001G	0.00031	0.0005	mg/L	J	MDLRL
Uranium, Dissolved	E200.8	West LDU	2112B70-004D	0.00035	0.0025	mg/L	J	MDLRL
Xylenes, Total	SW8260B	DUP 12/17/2021	2112b70-006a	0.73	1.5	µg/L	J	MDLRL
Zinc, Dissolved	E 200.7	OW-63	2112B70-001G	0.020	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	West LDU	2112B70-004D	0.013	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	MKTF-25	2112B70-002G	0.0075	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	MKTF-40	2112B70-003G	0.0074	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	DUP 12/17/2021	2112B70-006D	0.0055	0.010	mg/L	U	EBD, MDLRL

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-002 Task: 0006	Sample Start Date: 12/17/2021
Date Validated: 02/10/2022	Sample End Date: 12/21/2021
Parameters Included: ▪ Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B ▪ 1,2-Dibromoethane (EDB) by EPA Method 504.1 ▪ Semivolatile Organic Compounds (SVOC) by SW-846 Methods 8270C and 8270C with Selective Ion Monitoring (SIM) ▪ Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D ▪ TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified ▪ Total and Dissolved Metals by EPA Methods 200.7 and 200.8 ▪ Total and Dissolved Mercury by EPA Method 245.1 ▪ Anions by EPA Method 300.0	
Laboratory Project ID: 2112C34	
Data Validator: Daran O'Hollearn, Lead Project Scientist	
Reviewer: Mike Phillips, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

Tier II Data Validation Report Summary

- Equipment blanks
- Field blanks
- Trip blanks

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
EB-12-21-21	2112C34-001
MKTF-17R	2112C34-002
MKTF-18R	2112C34-003
MKTF-35	2112C34-004
MKTF-38	2112C34-005
FB-12-21-21	2112C34-006
DUP-12-21-21	2112C34-007
FB-12-17-21	2112C34-008
Trip blank	2112C34-009

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ○ Initial and Continuing Calibrations (Items 9 and 10)
- ⊗ Laboratory Blanks (Items 11 and 12)
- ✓ MS/MSD (Items 13 and 14)
- ✓ LCS/LCSD (Items 15 and 16)
- ✓ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Field, Equipment, and Trip Blanks (Items 18 and 19)
- ✓ Field Duplicates (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)
- ⊗ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
U	Evaluated to be undetected at the reporting limit
JB	Estimated concentration due to blank contamination

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 507 data points. The data completeness calculation does not include any submitted blank sample results. Data points were not rejected. The data completeness measure for this data package is calculated to be 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST

1. Was the report free of non-conformances identified by the laboratory? No

Comments: The laboratory noted the following analytical non-conformances related to this data set.

Method 8270: Pyridine is reported with an "E" flag. The "E" flag is used to represent an estimated value. Pyridine was not detected in the sample, but the calibration curve for this compound did not meet the method requirements. *Due to the data reported in this SDG, this comment was mistakenly placed in the narrative.*

"S" flags denote that the sample surrogate or spike result is outside of the acceptable limits due to sample dilution or matrix interferences.

2. Were the data free of data qualification flags and/or notes used by the laboratory? If no, define. No

Comments: The laboratory used the following data qualification flags with this data set.

D – Sample diluted due to matrix.

J – Analyte detected below quantitation limits.

S – % Recovery outside of range due to dilution or matrix.

* – Value exceeds maximum contaminant level.

3. Were sample CoC forms and custody procedures complete? Yes

Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.

4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable? Yes

Comments: The detection limits appeared to be acceptable. The following dilutions were applied.

Method	Sample(s)	Analyte(s)	Dilution Factor
200.7	Multiple Samples	Select Dissolved and Total Metals	5
200.8	MKTF-38	Total Uranium	5
300.0	Multiple Samples	Select Anions	5
200.7	MKTF-35	Select Dissolved and Total Metals	10
8015D	Multiple Sample	GRO	10
8015D	MKTF-18R	DRO and MRO	10
8260B	Multiple Samples	VOCs	10
8270C	MKTF-17R, MKTF-35, DUP-12-21-21	Select SVOCs	10
300.0	Multiple Samples	Chloride	20
300.0	MKTF-38	Sulfate	20
8270C	MKTF-18R	Select SVOCs	20
300.0	MKTF-35	Chloride	50
8260B	Multiple Samples	Select VOCs	100

5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC? Yes

Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.

VALIDATION CRITERIA CHECKLIST

6. Were samples received in good condition within method-specified requirements? No

Comments: Samples were received on ice, in good condition, and with the cooler temperatures outside the recommended temperature range of 4°C ± 2°C at 6.5°C, 6.9°C, and 7.0°C as noted on the CoC and Sample Log-in Check List.

The cooler temperatures above 6°C were evaluated to be acceptable since the samples were received at the laboratory on the same day (within 24 hours) of the last sample collection time, and temperature equilibrium had not been established.

7. Were samples extracted/digested and analyzed within method-specified or technical holding times? Yes

Comments: The samples were extracted/digested and analyzed within method-specific holding times.

8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil. Yes

Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.

9. Did the laboratory provide any specific initial and/or continuing calibration results? No

Comments: Initial and continuing calibration data were not included as part of this data set.

10. If initial and/or continuing calibration results were provided, were the results within acceptable limits? N/A

Comments: Initial and continuing calibration data were not included as part of this data set.

11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.

12. Were target analytes reported as not detected in the laboratory blanks? No

Comments: Target analytes were reported as not detected in the laboratory blanks, with the following, exception.

DRO was detected in the laboratory blank for Method 8015D batch 64709 at a concentration of 0.020 mg/L. Results greater than the blank detection and/or the laboratory reporting limit but less than 10 times the blank concentration were qualified with a JB flag. Detections of DRO in the associated samples greater than ten times the blank concentration did not require qualification.

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batches. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
200.7	Total Metals	64738	Not Prepared
200.7	Dissolved Metals	A84736	Not Prepared
200.8	Total Metals	64738	Not Prepared
200.8	Dissolved Metals	A84886	Not Prepared
245.1	Dissolved and Total Mercury	64998	Not Prepared
245.1	Dissolved and Total Mercury	64979	DUP-12-21-21
300.0	Anions	R84761	EB-12-21-21

VALIDATION CRITERIA CHECKLIST

Method	Analytes	Batch	MS Sample Source
300.0	Chloride	R85016	Not Prepared
504.1	EDB	64768	Not Prepared
8015D	DRO and MRO	64698	Not Prepared
8015D	DRO and MRO	64709	Not Prepared
8015D	GRO	G84831	MKTF-17R
8260B	VOCs	R84831	EB-12-21-21
8260B	VOCs	R84851	Not Prepared
8270 SIM	SVOCs	64693	Not Prepared
8270C	SVOCs	64740	Not Prepared

Not Prepared – Matrix spikes were not prepared/reported for this batch.

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? Yes

Comments: The percent recoveries and RPDs for MS/MSDs prepared from project samples were within data validation and laboratory QC limits.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? Yes

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits.

17. Were surrogate recoveries within laboratory QC limits? No

Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions.

Since Methods 8270C and 8270 SIM surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes in a given fraction (acid or base/neutral) when two or more surrogates from the same fraction (acid or base/neutral) were outside the acceptance range. This condition did not exist for the samples MKTF-17R, MKTF-35, and DUP-12-21-21, and qualification of sample data was not required.

The DRO and MRO results for sample MKTF-18R were not qualified based on the surrogate non-conformances in the Method 8015D analysis since the applied dilution of 10 times resulted in a surrogate concentration below routinely calibrated levels, and those results were deemed unreliable and possibly inaccurate.

Qualification of sample data was not required based on surrogate non-conformances in QC samples as the environmental samples were evaluated based on their specific surrogate recoveries.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One trip blank sample, Trip blank, two field blank samples, FB-12-17-21 and FB-12-21-21, and one equipment blank sample, EB-12-21-21, were collected as part of this sample set.

VALIDATION CRITERIA CHECKLIST

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
Trip blank	**8260B**	**1,2,4-Trimethylbenzene**	**0.12 µg/L**
FB-12-17-21	8015D	GRO	0.013 mg/L
FB-12-17-21	8260B	1,2,4-Trimethylbenzene	0.20 µg/L
FB-12-17-21	8260B	Acetone	3.20 µg/L
FB-12-21-21	**8260B**	**Acetone**	**3.60 µg/L**
FB-12-17-21	8260B	Toluene	0.62 µg/L
FB-12-17-21	8260B	Total Xylenes	0.43 µg/L
EB-12-21-21	**200.7**	**Dissolved Zinc**	**0.0043 mg/L**
EB-12-21-21	**300.0**	**Nitrate as N**	**0.038 mg/L**
EB-12-21-21	8015D	DRO	0.017 mg/L
EB-12-21-21	8260B	Acetone	3.50 µg/L

Detections of the identified analytes in the associated samples that were less than the blank results and/or less than the applicable reporting limits were assigned U qualifiers. Detections of the identified analytes in the associated samples that were greater than the reporting limits but less than 10 times the blank results were assigned JB qualifiers. Non-detections of the identified analytes in the associated samples and detections that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

The DRO results for the samples in batch 64709 were previously qualified due to laboratory blank contamination; therefore, additional qualification due to the equipment blank contamination was not required.

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample DUP-12-21-2021 was collected as a field duplicate of sample MKTF-17R.

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? Yes

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples.

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? N/A

Comments: Laboratory duplicate samples were not prepared for this sample set.

VALIDATION CRITERIA CHECKLIST

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? No

Comments: Target analytes were not reported by more than one method in this data set, with the following exceptions.

Target analytes 1,4-dichlorobenzene, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were reported by both Method 8260B and Method 8270C. 1,2-Dibromoethane was reported from analyses by both Method 8260B and 504.1. These analytes were reported as not detected by both methods, or one or both results were within 5 times the applicable reporting limit, with the following exceptions.

The 2-methylnaphthalene and naphthalene results in sample MKTF-18R were detected by Method 8260B and 8270C at more than 5 times the applicable reporting limits. The differences were not within the variability of the analytical methods, with RPD% of 46.2% and 57.4%, respectively. Given the differences between the findings, the results were assigned J qualifiers.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
MKTF-18R	Barium	1.5	1.6	0..015 / 0.010	mg/L	6.5%
DUP-12-21-21	Barium	0.34	0.35	0.0030 / 0.0020	mg/L	2.9%
MKTF-35	Iron	6.9	7.1	0.50 / 0.20	mg/L	2.9%
DUP-12-21-21	Manganese	3.4	3.5	0.0010 / 0.0010	mg/L	2.9%
EB-12-21-21	Zinc	ND	0.0043	0.010 / 0.010	mg/L	----- ♦
MKTF-17R	Zinc	ND	0.0078	0.010 / 0.010	mg/L	----- ♦
MKTF-18R	Zinc	ND	0.015	0.010 / 0.010	mg/L	----- ♦
MKTF-35	Zinc	ND	0.075	0.010 / 0.010	mg/L	----- ♦
MKTF-38	Zinc	ND	0.094	0.010 / 0.010	mg/L	----- ♦
DUP-12-21-21	Zinc	ND	0.012	0.010 / 0.010	mg/L	----- ♦

----- *RPD could not be calculated.*

♦ *= One or both of the detections were less than 2 times the applicable reporting limits and qualification of data was not required.*

The differences for the corresponding analytical results were within five times the applicable reporting limits and validation action was not required, or the differences between the results were less than 30% indicating that the data were within the measurement uncertainty for the methods and qualification of results was not required based on the analytical inconsistencies.

FIELD DUPLICATE SUMMARY

Client Sample ID: MKTF-17R Field Duplicate Sample ID: DUP-12-21-21				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Barium, Dissolved	E 200.7	0.34 mg/L	0.35 mg/L	2.9%
Barium, Total	E 200.7	0.34 mg/L	0.34 mg/L	0.0%
Iron, Dissolved	E 200.7	0.16 mg/L	0.21 mg/L	27.0%
Iron, Total	E 200.7	0.88 mg/L	0.99 mg/L	11.8%
Manganese, Dissolved	E 200.7	3.4 mg/L	3.5 mg/L	2.9%
Manganese, Total	E 200.7	3.4 mg/L	3.4 mg/L	0.0%
Zinc, Dissolved	E 200.7	0.0078 mg/L	0.012 mg/L	42.4% +/-RL
Arsenic, Dissolved	E200.8	0.0047 mg/L	0.0045 mg/L	4.3%
Arsenic, Total	E200.8	0.0053 mg/L	0.0054 mg/L	1.9%
Copper, Total	E200.8	0.0013 mg/L	0.0013 mg/L	0.0% +/-RL
Lead, Dissolved	E200.8	0.00012 mg/L	0.00011 mg/L	8.7% +/-RL
Lead, Total	E200.8	0.00050 mg/L	0.00054 mg/L	7.7% +/-RL
Uranium, Dissolved	E200.8	0.0047 mg/L	0.0048 mg/L	2.1%
Uranium, Total	E200.8	0.0051 mg/L	0.0053 mg/L	3.8%
Chloride	E300	180 mg/L	190 mg/L	5.4%
Fluoride, Total	E300	0.72 mg/L	0.70 mg/L	2.8% +/-RL
Nitrogen, Nitrate	E300	ND (0.50 mg/L)	0.20 mg/L	DL
Sulfate	E300	4.9 mg/L	4.8 mg/L	2.1% +/-RL
TPH DRO	SW8015	1.8 mg/L	1.9 mg/L	5.4%
TPH GRO	SW8015	28 mg/L	28 mg/L	0.0%
1,1,2-Trichloroethane	SW8260B	3.0 µg/L	ND (10 µg/L)	DL
1,1-Dichloroethane	SW8260B	5.5 µg/L	5.9 µg/L	7.0% +/-RL
1,2,4-Trimethylbenzene	SW8260B	370 µg/L	370 µg/L	0.0%
1,3,5-Trimethylbenzene	SW8260B	95 µg/L	100 µg/L	5.1%
1-Methylnaphthalene	SW8260B	18 µg/L	18 µg/L	0.0% +/-RL
2-Methylnaphthalene	SW8260B	22 µg/L	22 µg/L	0.0% +/-RL
Benzene	SW8260B	1500 µg/L	1600 µg/L	6.5%
Chloroform	SW8260B	4.9 µg/L	5.4 µg/L	9.7% +/-RL
Ethylbenzene	SW8260B	460 µg/L	490 µg/L	6.3%
Isopropylbenzene	SW8260B	30 µg/L	31 µg/L	3.3%
MTBE	SW8260B	4,300 µg/L	4,400 µg/L	2.3%
Naphthalene	SW8260B	72 µg/L	67 µg/L	7.2%
n-Butylbenzene	SW8260B	6.9 µg/L	7.7 µg/L	11.0% +/-RL
n-Propylbenzene	SW8260B	69 µg/L	73 µg/L	5.6%
p-Isopropyltoluene	SW8260B	3.6 µg/L	3.7 µg/L	2.7% +/-RL
sec-Butylbenzene	SW8260B	4.6 µg/L	ND (10 µg/L)	DL
Styrene	SW8260B	1.4 µg/L	1.4 µg/L	0.0% +/-RL
Toluene	SW8260B	5,800 µg/L	5,800 µg/L	0.0%

Analyte	Method	Laboratory Result	Duplicate Result	Relative Percent Difference (RPD)
Xylenes, Total	SW8260B	2,300 µg/L	2,400 µg/L	4.3%
1,4-Dioxane	SW8270C	3.9 µg/L	4.2 µg/L	7.4%
1-Methylnaphthalene	SW8270C	17 µg/L	15 µg/L	12.5%
2,4-Dimethylphenol	SW8270C	3.9 µg/L	4.3 µg/L	9.8% +/-RL
2-Methylnaphthalene	SW8270C	18 µg/L	18 µg/L	0.0%
2-Methylphenol	SW8270C	22 µg/L	22 µg/L	0.0%
3,4-Methylphenol	SW8270C	10 µg/L	11 µg/L	9.5%
Acenaphthene	SW8270C	1.0 µg/L	1.0 µg/L	0.0%
Anthracene	SW8270C	0.42 µg/L	0.42 µg/L	0.0%
Fluorene	SW8270C	1.9 µg/L	1.9 µg/L	0.0%
Naphthalene	SW8270C	45 µg/L	39 µg/L	14.3%
Phenanthrene	SW8270C	1.6 µg/L	1.5 µg/L	6.5%
Phenol	SW8270C	8.1 µg/L	9.2 µg/L	12.7% +/-RL
Pyrene	SW8270C	0.28 µg/L	0.28 µg/L	0.0% +/-RL

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
DATA-COMP	Analytical results for analyte by different methods did not meet comparability limits.
EBD	Equipment blank detection
FBD	Field blank detection
MBD	Method blank detection
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.
TBD	Trip blank detection

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,1,2-Trichloroethane	SW8260B	MKTF-17R	2112c34-002a	3.0	10	µg/L	J	MDLRL
1,1,2-Trichloroethane	SW8260B	MKTF-18R	2112c34-003a	2.6	10	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	MKTF-17R	2112c34-002a	5.5	10	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	MKTF-35	2112c34-004a	5.8	10	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	DUP-12-21-21	2112c34-007a	5.9	10	µg/L	J	MDLRL
1,2,4-Trimethylbenzene	SW8260B	Trip blank	2112c34-009a	0.12	1.0	µg/L	J	MDLRL
1,2,4-Trimethylbenzene	SW8260B	MKTF-38	2112c34-005a	0.24	1.0	µg/L	U	MDLRL, TBD
1,2,4-Trimethylbenzene	SW8260B	FB-12-17-21	2112c34-008a	0.2	1.0	µg/L	U	MDLRL, TBD
1,2-Dichloroethane	SW8260B	MKTF-35	2112c34-004a	3.9	10	µg/L	J	MDLRL
1,4-Dichlorobenzene	SW8260B	MKTF-35	2112c34-004a	3.5	10	µg/L	J	MDLRL
1-Methylnaphthalene	SW8260B	MKTF-17R	2112c34-002a	18	40	µg/L	J	MDLRL
1-Methylnaphthalene	SW8260B	DUP-12-21-21	2112c34-007a	18	40	µg/L	J	MDLRL
2,4-Dimethylphenol	SW8270C	MKTF-17R	2112C34-002D	3.9	5.0	µg/L	J	MDLRL
2,4-Dimethylphenol	SW8270C	MKTF-35	2112C34-004D	3.0	5.0	µg/L	J	MDLRL
2,4-Dimethylphenol	SW8270C	DUP-12-21-21	2112C34-007D	4.3	5.0	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	MKTF-17R	2112c34-002a	22	40	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
2-Methylnaphthalene	SW8260B	MKTF-35	2112c34-004a	7.9	40	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	MKTF-38	2112c34-005a	1.6	4.0	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	DUP-12-21-21	2112c34-007a	22	40	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	MKTF-18R	2112c34-003a	240	40	µg/L	J	DATA-COMP
2-Methylnaphthalene	SW8270C	MKTF-18R	2112c34-003d	150	2.0	µg/L	J	DATA-COMP
3,4-Methylphenol	SW8270C	MKTF-18R	2112C34-003D	2.2	5.0	µg/L	J	MDLRL
Acetone	SW8260B	EB-12-21-21	2112c34-001a	3.5	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	FB-12-21-21	2112c34-006a	3.6	10	µg/L	J	MDLRL
Acetone	SW8260B	FB-12-17-21	2112c34-008a	3.2	10	µg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-35	2112C34-004G	0.00038	0.0010	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-38	2112C34-005G	0.00079	0.0010	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-35	2112C34-004F	0.00052	0.0010	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-38	2112C34-005F	0.00093	0.0010	mg/L	J	MDLRL
Benzene	SW8260B	MKTF-38	2112c34-005a	0.95	1.0	µg/L	J	MDLRL
Chloroform	SW8260B	MKTF-17R	2112c34-002a	4.9	10	µg/L	J	MDLRL
Chloroform	SW8260B	MKTF-35	2112c34-004a	3.8	10	µg/L	J	MDLRL
Chloroform	SW8260B	DUP-12-21-21	2112c34-007a	5.4	10	µg/L	J	MDLRL
cis-1,2-Dichloroethene	SW8260B	MKTF-18R	2112c34-003a	5.5	10	µg/L	J	MDLRL
Copper, Dissolved	E200.8	MKTF-17R	2112C34-002G	0.00044	0.0010	µg/L	J	MDLRL
Isopropylbenzene	SW8260B	MKTF-18R	2112c34-003a	5.9	10	µg/L	J	MDLRL
Isopropylbenzene	SW8260B	MKTF-38	2112c34-005a	0.37	1.0	µg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-17R	2112C34-002G	0.00012	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-35	2112C34-004G	0.00015	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	DUP-12-21-21	2112C34-007G	0.00011	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-17R	2112C34-002F	0.00050	0.00050	mg/L	J	MDLRL
Naphthalene	SW8260B	MKTF-18R	2112c34-003a	130	20	µg/L	J	DATA-COMP
Naphthalene	SW8270C	MKTF-18R	2112c34-003d	72	2.0	µg/L	J	DATA-COMP

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
n-Butylbenzene	SW8260B	MKTF-17R	2112c34-002a	6.9	30	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-18R	2112c34-003a	4.1	30	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-35	2112c34-004a	3.2	30	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	DUP-12-21-21	2112c34-007a	7.7	30	µg/L	J	MDLRL
Nitrogen, Nitrate	E300	MKTF-18R	2112C34-003E	0.12	0.50	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	MKTF-35	2112C34-004E	0.11	0.50	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	DUP-12-21-21	2112C34-007E	0.20	0.50	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	EB-12-21-21	2112C34-001E	0.038	0.10	mg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	MKTF-17R	2112c34-002a	3.6	10	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	MKTF-18R	2112c34-003a	3.3	10	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	DUP-12-21-21	2112c34-007a	3.7	10	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-17R	2112c34-002a	4.6	10	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-18R	2112c34-003a	3.2	10	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-35	2112c34-004a	2.6	10	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-38	2112c34-005a	0.51	1.0	µg/L	J	MDLRL
Styrene	SW8260B	MKTF-17R	2112c34-002a	1.4	10	µg/L	J	MDLRL
Styrene	SW8260B	MKTF-35	2112c34-004a	2.1	10	µg/L	J	MDLRL
Styrene	SW8260B	DUP-12-21-21	2112c34-007a	1.4	10	µg/L	J	MDLRL
Toluene	SW8260B	MKTF-38	2112c34-005a	0.45	1.0	µg/L	J	MDLRL
Toluene	SW8260B	FB-12-17-21	2112c34-008a	0.62	1.0	µg/L	J	MDLRL
TPH DRO	SW8015	MKTF-38	2112C34-005C	0.15	0.064	mg/L	JB	MBD
TPH DRO	SW8015	EB-12-21-21	2112C34-001C	0.017	0.064	mg/L	J	MDLRL
TPH GRO	SW8015	MKTF-38	2112c34-005a	0.024	0.050	mg/L	J	MDLRL
TPH GRO	SW8015	FB-12-17-21	2112c34-008a	0.013	0.050	mg/L	J	MDLRL
Trichloroethene	SW8260B	MKTF-38	2112c34-005a	0.24	1.0	µg/L	J	MDLRL
Xylenes, Total	SW8260B	MKTF-38	2112c34-005a	0.37	1.5	µg/L	J	MDLRL
Xylenes, Total	SW8260B	FB-12-17-21	2112c34-008a	0.43	1.5	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Zinc, Dissolved	E 200.7	MKTF-18R	2112C34-003G	0.015	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	DUP-12-21-21	2112C34-007G	0.012	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	MKTF-17R	2112C34-002G	0.0078	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	EB-12-21-21	2112C34-001G	0.0043	0.010	mg/L	J	MDLRL

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-002 Task: 0006	Sample Start Date: 12/22/2021
Date Validated: 02/10/2022	Sample End Date: 12/22/2021
Parameters Included: ▪ Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B ▪ Semivolatile Organic Compounds (SVOC) by SW-846 Methods 8270C and 8270C with Selective Ion Monitoring (SIM) ▪ Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D ▪ TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified ▪ Total and Dissolved Metals by EPA Methods 200.7 and 200.8 ▪ Total and Dissolved Mercury by EPA Method 245.1 ▪ Anions by EPA Method 300.0	
Laboratory Project ID: 2112D00	
Data Validator: Daran O'Hollearn, Lead Project Scientist	
Reviewer: Mike Phillips, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Equipment blanks
- Field blanks

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Tier II Data Validation Report Summary

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
EB-12-22-21	2112D00-001
MKTF-04R	2112D00-002
MKTF-01R	2112D00-003
NDD-MW-1	2112D00-004
NDD-MW-2	2112D00-005
FB-12-22-21	2112D00-006
DUP-12-22-21	2112D00-007

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ○ Initial and Continuing Calibrations (Items 9 and 10)
- ⊗ Laboratory Blanks (Items 11 and 12)
- ○ Matrix Spikes (MS) and Matrix Spike Duplicates (MSD) (Items 13 and 14)
- ⊗ LCS/LCSD (Items 15 and 16)
- ⊗ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Field and Equipment Blanks (Items 18 and 19)
- ⊗ Field Duplicates (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)
- ⊗ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
J+	The result is an estimated concentration, but may be biased high
JB	Estimated concentration due to blank contamination
U	Evaluated to be undetected at the reporting limit
UJ	Estimated reporting limit

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 451 data points. The data completeness calculation does not include any submitted blank sample results. Data points were not rejected. The data completeness measure for this data package is calculated to be 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST

1. Was the report free of non-conformances identified by the laboratory? No

Comments: The laboratory noted the following analytical non-conformances related to this data set.

Method 8270: Pyridine is reported with an "E" flag. The "E" flag is used to represent an estimated value. Pyridine was not detected in the sample, but the calibration curve for this compound did not meet the method requirements. *According to the data reported in this SDG, this comment was mistakenly placed in the case narrative.*

"S" flags denote that the sample surrogate or spike result is outside of the acceptable limits due to sample dilution or matrix interferences.

2. Were the data free of data qualification flags and/or notes used by the laboratory? If no, define. No

Comments: The laboratory used the following data qualification flags with this data set.

J – Analyte detected below quantitation limits.

S – % Recovery outside of range due to dilution or matrix.

* – Value exceeds maximum contaminant level.

3. Were sample CoC forms and custody procedures complete? Yes

Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.

4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable? Yes

Comments: The detection limits appeared to be acceptable. The following dilutions were applied.

Method	Sample(s)	Analyte(s)	Dilution Factor
200.7	MKTF-04R, MKTF-01R, DUP-12-22-21	Select Dissolved and Total Metals	5
200.8	MKTF-01R, NDD-MW-2, DUP-12-22-21	Select Dissolved and Total Metals	5
300.0	Multiple Samples	Select Anions	5
8015D	MKTF-04R, DUP-12-22-21	GRO	5
8260B	MKTF-04R, DUP-12-22-21	VOCs	5
200.7	MKTF-01R	Select Dissolved and Total Metals	10
8015D	MKTF-01R, NDD-MW-2	GRO	10
8260B	MKTF-01R, NDD-MW-2	Select VOCs	10
8270C	MKTF-04R	1,4-Dioxane	10
8270C	MKTF-01R	Naphthalene	10
8270C	DUP-12-22-21	Select SVOCs	10
300.0	MKTF-04R, NDD-MW-1, DUP-12-22-21	Chloride	20
300.0	MKTF-01R, NDD-MW-2	Chloride	100
8260B	MKTF-01R	Benzene	100

5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC? Yes

Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.

VALIDATION CRITERIA CHECKLIST	
6. Were samples received in good condition within method-specified requirements?	No
Comments: Samples were received on ice, in good condition, and with the cooler temperatures both within and outside the recommended temperature range of 4°C ± 2°C at 1.7°C, 3.0°C, and 8.2°C as noted on the CoC and Sample Log-in Check List. The cooler temperature above 6°C was evaluated to be acceptable since the samples were received at the laboratory on the same day (within 24 hours) of the last sample collection time, and temperature equilibrium had not been established. The cooler temperature below 2.0°C was judged as acceptable since the laboratory did not report the sample containers as broken or frozen.	
7. Were samples extracted/digested and analyzed within method-specified or technical holding times?	Yes
Comments: The samples were extracted/digested and analyzed within method-specific holding times.	
8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil.	Yes
Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.	
9. Did the laboratory provide any specific initial and/or continuing calibration results?	No
Comments: Initial and continuing calibration data were not included as part of this data set.	
10. If initial and/or continuing calibration results were provided, were the results within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set.	
11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method?	Yes
Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.	
12. Were target analytes reported as not detected in the laboratory blanks?	No
Comments: Target analytes were reported as not detected in the laboratory blanks, with the following exception. **DRO was detected in the laboratory blank for Method 8015D batch 64709 at a concentration of 0.020 mg/L. Sample results detected below the blank concentration and the laboratory reporting limit were qualified with a U flag.** Detections of DRO in the associated samples greater than ten times the blank concentration did not require qualification.	
13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method?	No
Comments: The total number of matrix spike samples prepared was not equal to at least 5% of the total number of samples. Matrix spikes were not prepared for the analyses in this data set.	
14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits?	N/A
Comments: MS/MSD samples were not prepared using project samples as the sample source.	
15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method?	Yes
Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.	

VALIDATION CRITERIA CHECKLIST	
16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits?	No
Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits., with the following exception. **The recovery for dissolved cadmium in Method 200.7 batch A84839 was outside the data validation acceptance limits of 70-130% at 65.9% indicating a potential low bias. Dissolved cadmium was not detected in the associated samples, and these results were qualified with UJ flags.**	
17. Were surrogate recoveries within laboratory QC limits?	No
Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions. **The recoveries of Method 8270 SIM surrogates nitrobenzene-d_5, 2-fluorobiphenyl, and 4-terphenyl-d_{14} for sample NDD-MW-2 were outside the laboratory acceptance ranges of 21.9-89.8%, 15-84.5%, and 73.1-152% at 13.5%, 5.50%, and 11.0%, respectively. The target analytes associated with these surrogates were not detected in sample NDD-MW-2, and the results were assigned UJ qualifiers due to evidence of potential low bias.** **The Method 8270 SIM surrogates nitrobenzene-d_5, 2-fluorobiphenyl, and 4-terphenyl-d_{14} were recovered in sample DUP-12-22-21 above the acceptance limits of 21.9-89.8%, 15-84.5%, and 73.1-152% at 695%, 565%, and 1,020%, respectively. The target analytes associated with these surrogates that were detected in sample DUP-12-22-21were assigned J+ qualifiers due to evidence of potential high bias.** The associated analytes that were not detected in the sample did not require qualification. Since Methods 8270C and 8270 SIM surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes in a given fraction (acid or base/neutral) when two or more surrogates from the same fraction (acid or base/neutral) were outside the acceptance range. This condition did not exist for the samples MKTF-01R and NDD-MW-2, and qualification of sample data was not required. Qualification of sample data was not required based on surrogate non-conformances in QC samples as the environmental samples were evaluated based on their specific surrogate recoveries.	
18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit?	Yes
Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One field blank sample, FB-12-22-21, and one equipment blank sample, EB-12-22-21, were collected as part of this sample set.	

VALIDATION CRITERIA CHECKLIST

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
FB-12-22-21	8015D	TPH GRO	0.023 mg/L
FB-12-22-21	**8260B**	**1,1,2-Trichloroethane**	**0.25 µg/L**
FB-12-22-21	**8260B**	**1,2,4-Trimethylbenzene**	**0.42 µg/L**
FB-12-22-21	**8260B**	**1,3,5-Trimethylbenzene**	**0.26 µg/L**
FB-12-22-21	**8260B**	**Acetone**	**4.0 µg/L**
FB-12-22-21	8260B	Benzene	0.24 µg/L
FB-12-22-21	**8260B**	**Toluene**	**0.30 µg/L**
EB-12-22-21	**200.7**	**Dissolved Zinc**	**0.0078 mg/L**
EB-12-22-21	**300.0**	**Nitrate as N**	**0.066 mg/L**
EB-12-21-21	8015D	DRO	0.017 mg/L
EB-12-21-21	8260B	Acetone	3.7 µg/L

Detections of the identified analytes in the associated samples that were less than or equal to the blank results and/or less than the applicable reporting limits were assigned U qualifiers. Detections of the identified analytes in the associated samples that were greater than the reporting limits but less than 10 times the blank results were assigned JB qualifiers. Non-detections of the identified analytes in the associated samples and detections that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

The DRO results for the samples in batch 64709 were previously qualified due to laboratory blank contamination; therefore, additional qualification due to the equipment blank contamination was not required.

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample DUP-12-22-2021 was collected as a field duplicate of sample MKTF-04R.

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? No

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples, with the following exceptions.

The RPD values for total lead and 1,4-dioxane exceeded the data validation limit of 30% at 34.1% and 87.5%, which was evidence of poor precision. The total lead and 1,4-dioxane results were qualified as J for samples MKTF-04R and DUP-12-22-21.

The RPD values for multiple analytes greatly exceeded the data validation limit of 30%. These analyte results were qualified as J for the parent and duplicate samples, MKTF-04R and DUP-12-22-21, as well as the remaining associated samples with detections, based on evidence of extremely poor precision (RPD > 100%). Non-detect results were qualified as UJ in the associated samples.

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? N/A

Comments: Laboratory duplicate samples were not prepared for this sample set.

VALIDATION CRITERIA CHECKLIST

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? Yes

Comments: Target analytes were not reported by more than one method in this data set, with the following exceptions.

Target analytes 1,4-dichlorobenzene, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were reported by both Method 8260B and Method 8270C. These analytes were reported as not detected by both methods, or one or both results were within 5 times the applicable reporting limit. Qualification of data was not required.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
NDD-MW-1	Barium	0.61	0.62	0..0030 / 0.0020	mg/L	1.6%
NDD-MW-1	Manganese	0.31	0.32	0.0020 / 0.0020	mg/L	3.2%
NDD-MW-2	Selenium	0.0014	0.0015	0.0010 / 0.0010	mg/L	6.9% ♦
MKTF-01R	Uranium	0.0017	0.0020	0.0025 / 0.0050	mg/L	16.2% ♦
NDD-MW-2	Uranium	0.033	0.036	0.0025 / 0.0025	mg/L	8.7%
DUP-12-22-21	Uranium	0.020	0.021	0.0025 / 0.00050	mg/L	4.9%
EB-12-22-21	Zinc	ND	0.0078	0.010 / 0.010	mg/L	----- ♦
MKTF-04R	**Zinc**	**0.030**	**0.075**	**0.010 / 0.010**	**mg/L**	**85.7%**
MKTF-01R	Zinc	ND	0.0088	0.010 / 0.010	mg/L	----- ♦
NDD-MW-1	Zinc	ND	0.016	0.010 / 0.010	mg/L	----- ♦
NDD-MW-2	Zinc	0.014	0.16	0.010 / 0.010	mg/L	167.8% ♦
DUP-12-22-21	Zinc	0.0085	0.016	0.010 / 0.010	mg/L	61.2% ♦

----- *RPD could not be calculated.*

♦ = *One or both of the detections were less than 2 times the applicable reporting limits, and qualification of data was not required.*

The differences for the corresponding analytical results were within five times the applicable reporting limits and validation action was not required, or the differences between the results were less than 30% indicating that the data were within the measurement uncertainty for the methods, and qualification of results was not required based on the analytical inconsistencies, with the following exception.

For sample MKTF-04R, the RPD value for zinc was greater than the field duplicate limit of 30%. The discrepancy was evaluated to be significant, and the total and dissolved zinc results for sample MKTF-04R were assigned J qualifiers.

FIELD DUPLICATE SUMMARY

Client Sample ID: MKTF-04R Field Duplicate Sample ID: DUP-12-22-21				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Barium, Dissolved	E 200.7	0.55 mg/L	0.55 mg/L	0.0%
Barium, Total	E 200.7	0.60 mg/L	0.63 mg/L	4.9%
Chromium, Total	E 200.7	ND (0.0060 mg/L)	0.0024 mg/L	DL
Iron, Dissolved	E 200.7	0.49 mg/L	0.45 mg/L	8.5%
Iron, Total	E 200.7	2.2 mg/L	2.7 mg/L	20.4%
Manganese, Dissolved	E 200.7	2.5 mg/L	2.6 mg/L	3.9%
Manganese, Total	E 200.7	2.6 mg/L	2.6 mg/L	0.0%
Zinc, Dissolved	**E 200.7**	**0.075 mg/L**	**0.016 mg/L**	**129.7%**
Zinc, Total	**E 200.7**	**0.030 mg/L**	**0.0085 mg/L**	**111.7%**
Arsenic, Dissolved	E200.8	0.0019 mg/L	0.0019 mg/L	0.0% +/-RL
Arsenic, Total	E200.8	0.0029 mg/L	0.0030 mg/L	3.4%
Copper, Dissolved	E200.8	0.00063 mg/L	0.00050 mg/L	23.0% +/-RL
Copper, Total	E200.8	0.0027 mg/L	0.0035 mg/L	25.8%
Lead, Total	**E200.8**	**0.0017 mg/L**	**0.0024 mg/L**	**34.1%**
Selenium, Total	E200.8	ND (0.0010) mg/L	0.00068 mg/L	DL
Uranium, Dissolved	E200.8	0.021 mg/L	0.021 mg/L	0.0%
Uranium, Total	E200.8	0.024 mg/L	0.020 mg/L	18.2%
Chloride	E300	240 mg/L	240 mg/L	0.0%
Fluoride, Total	E300	0.28 mg/L	0.27 mg/L	3.6% +/-RL
Nitrogen, Nitrate	E300	0.066 mg/L	ND (0.50 mg/L)	DL
Sulfate	E300	92 mg/L	93 mg/L	1.1%
TPH DRO	SW8015	1.2 mg/L	1.1 mg/L	8.7%
TPH GRO	SW8015	2.1 mg/L	2.1 mg/L	0.0%
1,1,2-Trichloroethane	SW8260B	ND (5.0 µg/L)	1.4 µg/L	DL
1,1-Dichloroethane	SW8260B	54 µg/L	52 µg/L	3.8%
1,1-Dichloroethene	SW8260B	81 µg/L	77 µg/L	5.1%
1,2,4-Trimethylbenzene	SW8260B	39 µg/L	41 µg/L	5.0%
1,2-Dichloroethane	SW8260B	2.7 µg/L	2.6 µg/L	3.8% +/-RL
1,2-Dichloropropane	SW8260B	1.7 µg/L	1.7 µg/L	0.0% +/-RL
1,3,5-Trimethylbenzene	SW8260B	4.3 µg/L	4.6 µg/L	6.7% +/-RL
1-Methylnaphthalene	SW8260B	13 µg/L	13 µg/L	0.0% +/-RL
2-Methylnaphthalene	SW8260B	6.6 µg/L	7.1 µg/L	7.3% +/-RL
Benzene	SW8260B	190 µg/L	180 µg/L	5.4%
Chloroform	SW8260B	1.5 µg/L	1.5 µg/L	0.0% +/-RL
Chloromethane	SW8260B	2.9 µg/L	2.8 µg/L	3.5% +/-RL
cis-1,2-Dichloroethene	SW8260B	26 µg/L	25 µg/L	3.9%
Ethylbenzene	SW8260B	33 µg/L	33 µg/L	0.0%
Isopropylbenzene	SW8260B	2.4 µg/L	2.5 µg/L	4.1% +/-RL

Analyte	Method	Laboratory Result	Duplicate Result	Relative Percent Difference (RPD)
MTBE	SW8260B	860 µg/L	860 µg/L	0.0%
Naphthalene	SW8260B	19 µg/L	20 µg/L	5.1% +/-RL
n-Butylbenzene	SW8260B	1.4 µg/L	1.4 µg/L	0.0% +/-RL
n-Propylbenzene	SW8260B	3.2 µg/L	3.3 µg/L	3.1% +/-RL
p-Isopropyltoluene	SW8260B	1.2 µg/L	1.3 µg/L	8.0% +/-RL
sec-Butylbenzene	SW8260B	1.4 µg/L	1.5 µg/L	6.9% +/-RL
Toluene	SW8260B	2.9 µg/L	2.3 µg/L	23.1% +/-RL
Trichloroethene	SW8260B	3.3 µg/L	3.1 µg/L	6.3% +/-RL
Xylenes, Total	SW8260B	52 µg/L	52 µg/L	0.0%
1,4-Dioxane	**SW8270C**	**23 µg/L**	**9.0 µg/L**	**87.5%**
1-Methylnaphthalene	**SW8270C**	**10 µg/L**	**160 µg/L**	**176.5%**
2-Methylnaphthalene	**SW8270C**	**6.0 µg/L**	**94 µg/L**	**176.0%**
Acenaphthene	**SW8270C**	**1.1 µg/L**	**13 µg/L**	**168.8%**
Anthracene	**SW8270C**	**0.44 µg/L**	**4.2 µg/L**	**162.1%**
Fluorene	**SW8270C**	**1.4 µg/L**	**21 µg/L**	**175.0%**
Naphthalene	**SW8270C**	**12 µg/L**	**200 µg/L**	**177.4%**
Phenanthrene	**SW8270C**	**1.2 µg/L**	**24 µg/L**	**181.0%**
Phenol	SW8270C	1.5 µg/L	1.7 µg/L	12.5% +/-RL
Pyrene	SW8270C	0.26 µg/L	ND (2.0 µg/L)	DL

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD values for total lead and 1,4-dioxane exceeded the data validation limit of 30% at 34.1% and 87.5%, which was evidence of poor precision. The total lead and 1,4-dioxane results were qualified as J for samples MKTF-04R and DUP-12-22-21.

The RPD values for multiple analytes greatly exceeded the data validation limit of 30%. These analyte results were qualified as J for the parent and duplicate samples, MKTF-04R and DUP-12-22-21, as well as the remaining associated samples with detections, based on evidence of extremely poor precision (RPD > 100%). Non-detect results were qualified as UJ in the associated samples.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
EBD	Equipment blank detection
ERPD-FD	High field duplicate RPD.
FBD	Field blank detection
HR-SUR	The surrogate percent recovery was greater than the upper acceptable limit indicating a possible high bias.
LR-LCS	The LCS and/or LCSD percent recovery was less than the lower acceptable limit indicating a possible low bias.
LR-SUR	The surrogate percent recovery was less than the lower acceptable limit indicating a possible low bias.
MBD	Method blank detection
DATA-COMP	Analytical results for analyte by different methods did not meet comparability limits.
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,1,2-Trichloroethane	SW8260B	DUP-12-22-21	2112d00-007a	1.4	5.0	µg/L	U	FBD, MDLRL
1,1,2-Trichloroethane	SW8260B	FB-12-22-21	2112d00-006a	0.25	1.0	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	MKTF-01R	2112d00-003a	4.9	10	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	NDD-MW-1	2112d00-004a	0.85	1.0	µg/L	J	MDLRL
1,2,4-Trimethylbenzene	SW8260B	NDD-MW-1	2112d00-004a	0.90	1.0	µg/L	U	FBD, MDLRL
1,2,4-Trimethylbenzene	SW8260B	FB-12-22-21	2112d00-006a	0.42	1.0	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	MKTF-04R	2112d00-002a	2.7	5.0	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	MKTF-01R	2112d00-003a	4.7	10	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	NDD-MW-2	2112d00-005a	0.48	1.0	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	DUP-12-22-21	2112d00-007a	2.6	5.0	µg/L	J	MDLRL
1,2-Dichloropropane	SW8260B	MKTF-04R	2112d00-002a	1.7	5.0	µg/L	J	MDLRL
1,2-Dichloropropane	SW8260B	DUP-12-22-21	2112d00-007a	1.7	5.0	µg/L	J	MDLRL
1,3,5-Trimethylbenzene	SW8260B	NDD-MW-1	2112d00-004a	0.39	1.0	µg/L	U	FBD, MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,3,5-Trimethylbenzene	SW8260B	MKTF-04R	2112d00-002a	4.3	5.0	µg/L	J	MDLRL
1,3,5-Trimethylbenzene	SW8260B	FB-12-22-21	2112d00-006a	0.26	1.0	µg/L	J	MDLRL
1,3,5-Trimethylbenzene	SW8260B	DUP-12-22-21	2112d00-007a	4.6	5.0	µg/L	J	MDLRL
1,4-Dioxane	SW8270C	MKTF-04R	2112d00-002d	23	10	µg/L	J	ERPD-FD
1,4-Dioxane	SW8270C	DUP-12-22-21	2112d00-007d	9.0	10	µg/L	J+	ERPD-FD, HR-SUR, MDLRL
1-Methylnaphthalene	SW8270C	MKTF-04R	2112d00-002d	10	0.10	µg/L	J	ERPD-FD
1-Methylnaphthalene	SW8270C	MKTF-01R	2112d00-003d	18	0.10	µg/L	J	ERPD-FD
1-Methylnaphthalene	SW8270C	EB-12-22-21	2112d00-001d	ND	0.10	µg/L	UJ	ERPD-FD
1-Methylnaphthalene	SW8270C	NDD-MW-1	2112d00-004d	ND	0.10	µg/L	UJ	ERPD-FD
1-Methylnaphthalene	SW8270C	DUP-12-22-21	2112d00-007d	160	1.0	µg/L	J+	ERPD-FD, HR-SUR
1-Methylnaphthalene	SW8270C	NDD-MW-2	2112d00-005d	ND	0.10	µg/L	UJ	ERPD-FD, LR-SUR
1-Methylnaphthalene	SW8260B	MKTF-04R	2112d00-002a	13	20	µg/L	J	MDLRL
1-Methylnaphthalene	SW8260B	MKTF-01R	2112d00-003a	31	40	µg/L	J	MDLRL
1-Methylnaphthalene	SW8260B	NDD-MW-2	2112d00-005a	3.5	4.0	µg/L	J	MDLRL
1-Methylnaphthalene	SW8260B	DUP-12-22-21	2112d00-007a	13	20	µg/L	J	MDLRL
2,4-Dimethylphenol	SW8270C	MKTF-01R	2112D00-003D	2.6	5.0	µg/L	J	MDLRL
2-Methylnaphthalene	SW8270C	MKTF-04R	2112d00-002d	6	0.10	µg/L	J	ERPD-FD
2-Methylnaphthalene	SW8270C	MKTF-01R	2112d00-003d	14	0.10	µg/L	J	ERPD-FD
2-Methylnaphthalene	SW8270C	EB-12-22-21	2112d00-001d	ND	0.10	µg/L	UJ	ERPD-FD
2-Methylnaphthalene	SW8270C	NDD-MW-1	2112d00-004d	ND	0.10	µg/L	UJ	ERPD-FD
2-Methylnaphthalene	SW8270C	DUP-12-22-21	2112d00-007d	94	1.0	µg/L	J+	ERPD-FD, HR-SUR
2-Methylnaphthalene	SW8270C	NDD-MW-2	2112d00-005d	ND	0.10	µg/L	UJ	ERPD-FD, LR-SUR
2-Methylnaphthalene	SW8260B	MKTF-04R	2112d00-002a	6.6	20	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	MKTF-01R	2112d00-003a	22	40	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	NDD-MW-2	2112d00-005a	2.7	4.0	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	DUP-12-22-21	2112d00-007a	7.1	20	µg/L	J	MDLRL
Acenaphthene	SW8270C	MKTF-04R	2112d00-002d	1.1	0.10	µg/L	J	ERPD-FD

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Acenaphthene	SW8270C	MKTF-01R	2112d00-003d	0.54	0.10	µg/L	J	ERPD-FD
Acenaphthene	SW8270C	NDD-MW-1	2112d00-004d	0.24	0.10	µg/L	J	ERPD-FD
Acenaphthene	SW8270C	EB-12-22-21	2112d00-001d	ND	0.10	µg/L	UJ	ERPD-FD
Acenaphthene	SW8270C	DUP-12-22-21	2112d00-007d	13	1.0	µg/L	J+	ERPD-FD, HR-SUR
Acenaphthene	SW8270C	NDD-MW-2	2112d00-005d	ND	0.10	µg/L	UJ	ERPD-FD, LR-SUR
Acetone	SW8260B	EB-12-22-21	2112d00-001a	3.7	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	NDD-MW-1	2112d00-004a	5.0	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	NDD-MW-2	2112d00-005a	5.5	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	FB-12-22-21	2112d00-006a	4.0	10	µg/L	J	MDLRL
Anthracene	SW8270C	MKTF-04R	2112d00-002d	0.44	0.10	µg/L	J	ERPD-FD
Anthracene	SW8270C	EB-12-22-21	2112d00-001d	ND	0.10	µg/L	UJ	ERPD-FD
Anthracene	SW8270C	MKTF-01R	2112d00-003d	ND	0.10	µg/L	UJ	ERPD-FD
Anthracene	SW8270C	DUP-12-22-21	2112d00-007d	4.2	1.0	µg/L	J+	ERPD-FD, HR-SUR
Benzene	SW8260B	FB-12-22-21	2112d00-006a	0.24	1.0	µg/L	J	MDLRL
Cadmium, Dissolved	E 200.7	EB-12-22-21	2112D00-001G	ND	0.0020	mg/L	UJ	LR-LCS
Cadmium, Dissolved	E 200.7	MKTF-04R	2112D00-002G	ND	0.0020	mg/L	UJ	LR-LCS
Cadmium, Dissolved	E 200.7	MKTF-01R	2112D00-003G	ND	0.0020	mg/L	UJ	LR-LCS
Carbazole	SW8270C	NDD-MW-1	2112D00-004D	0.76	5.0	µg/L	J	MDLRL
Chloroform	SW8260B	MKTF-04R	2112d00-002a	1.5	5.0	µg/L	J	MDLRL
Chloroform	SW8260B	DUP-12-22-21	2112d00-007a	1.5	5.0	µg/L	J	MDLRL
Chloromethane	SW8260B	MKTF-04R	2112d00-002a	2.9	15	µg/L	J	MDLRL
Chloromethane	SW8260B	DUP-12-22-21	2112d00-007a	2.8	15	µg/L	J	MDLRL
Chromium, Total	E 200.7	DUP-12-22-21	2112D00-007F	0.0024	0.006	mg/L	J	MDLRL
Copper, Dissolved	E200.8	MKTF-04R	2112D00-002G	0.00063	0.0010	mg/L	J	MDLRL
Copper, Dissolved	E200.8	NDD-MW-2	2112D00-005G	0.00085	0.0010	mg/L	J	MDLRL
Copper, Dissolved	E200.8	DUP-12-22-21	2112D00-007G	0.0005	0.0010	mg/L	J	MDLRL
Copper, Total	E200.8	MKTF-01R	2112D00-003F	0.0008	0.0010	mg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Copper, Total	E200.8	NDD-MW-2	2112D00-005F	0.0048	0.0050	mg/L	J	MDLRL
Ethylbenzene	SW8260B	NDD-MW-1	2112d00-004a	0.29	1.0	µg/L	J	MDLRL
Fluoranthene	SW8270C	NDD-MW-2	2112d00-005d	ND	0.20	µg/L	UJ	LR-SUR
Fluorene	SW8270C	MKTF-04R	2112d00-002d	1.4	0.10	µg/L	J	ERPD-FD
Fluorene	SW8270C	MKTF-01R	2112d00-003d	0.82	0.10	µg/L	J	ERPD-FD
Fluorene	SW8270C	EB-12-22-21	2112d00-001d	ND	0.10	µg/L	UJ	ERPD-FD
Fluorene	SW8270C	NDD-MW-1	2112d00-004d	ND	0.10	µg/L	UJ	ERPD-FD
Fluorene	SW8270C	DUP-12-22-21	2112d00-007d	21	1.0	µg/L	J+	ERPD-FD, HR-SUR
Fluorene	SW8270C	NDD-MW-2	2112d00-005d	ND	0.10	µg/L	UJ	ERPD-FD, LR-SUR
Fluoride, Total	E300	MKTF-04R	2112D00-002E	0.28	0.50	mg/L	J	MDLRL
Fluoride, Total	E300	MKTF-01R	2112D00-003E	0.45	0.50	mg/L	J	MDLRL
Fluoride, Total	E300	DUP-12-22-21	2112D00-007E	0.27	0.50	mg/L	J	MDLRL
Isopropylbenzene	SW8260B	MKTF-04R	2112d00-002a	2.4	5.0	µg/L	J	MDLRL
Isopropylbenzene	SW8260B	DUP-12-22-21	2112d00-007a	2.5	5.0	µg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-01R	2112D00-003G	0.000059	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	NDD-MW-1	2112D00-004G	0.00013	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-04R	2112D00-002F	0.0017	0.00050	mg/L	J	ERPD-FD
Lead, Total	E200.8	DUP-12-22-21	2112D00-007F	0.0024	0.00050	mg/L	J	ERPD-FD
Lead, Total	E200.8	MKTF-01R	2112D00-003F	0.0010	0.0025	mg/L	J	MDLRL
Lead, Total	E200.8	NDD-MW-1	2112D00-004F	0.00031	0.00050	mg/L	J	MDLRL
Naphthalene	SW8270C	MKTF-04R	2112d00-002d	12	0.10	µg/L	J	ERPD-FD
Naphthalene	SW8270C	MKTF-01R	2112d00-003d	11	1.0	µg/L	J	ERPD-FD
Naphthalene	SW8270C	NDD-MW-1	2112d00-004d	0.28	0.10	µg/L	J	ERPD-FD
Naphthalene	SW8270C	EB-12-22-21	2112d00-001d	ND	0.10	µg/L	UJ	ERPD-FD
Naphthalene	SW8270C	DUP-12-22-21	2112d00-007d	200	1.0	µg/L	J+	ERPD-FD, HR-SUR
Naphthalene	SW8270C	NDD-MW-2	2112d00-005d	ND	0.10	µg/L	UJ	ERPD-FD, LR-SUR
Naphthalene	SW8260B	NDD-MW-1	2112d00-004a	0.64	2.0	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
n-Butylbenzene	SW8260B	MKTF-04R	2112d00-002a	1.4	15	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-01R	2112d00-003a	14	30	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	NDD-MW-1	2112d00-004a	1.0	3.0	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	NDD-MW-2	2112d00-005a	1.9	3.0	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	DUP-12-22-21	2112d00-007a	1.4	15	µg/L	J	MDLRL
Nitrogen, Nitrate	E300	MKTF-04R	2112D00-002E	0.066	0.50	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	NDD-MW-1	2112D00-004E	0.098	0.50	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	EB-12-22-21	2112D00-001E	0.066	0.50	mg/L	J	MDLRL
n-Propylbenzene	SW8260B	MKTF-04R	2112d00-002a	3.2	5.0	µg/L	J	MDLRL
n-Propylbenzene	SW8260B	NDD-MW-2	2112d00-005a	0.79	1.0	µg/L	J	MDLRL
n-Propylbenzene	SW8260B	DUP-12-22-21	2112d00-007a	3.3	5.0	µg/L	J	MDLRL
Phenanthrene	SW8270C	MKTF-04R	2112d00-002d	1.2	0.10	µg/L	J	ERPD-FD
Phenanthrene	SW8270C	MKTF-01R	2112d00-003d	0.36	0.10	µg/L	J	ERPD-FD
Phenanthrene	SW8270C	NDD-MW-1	2112d00-004d	0.90	0.10	µg/L	J	ERPD-FD
Phenanthrene	SW8270C	EB-12-22-21	2112d00-001d	ND	0.10	µg/L	UJ	ERPD-FD
Phenanthrene	SW8270C	DUP-12-22-21	2112d00-007d	24	1.0	µg/L	J+	ERPD-FD, HR-SUR
Phenanthrene	SW8270C	NDD-MW-2	2112d00-005d	ND	0.10	µg/L	UJ	ERPD-FD, LR-SUR
Phenol	SW8270C	MKTF-04R	2112D00-002D	1.5	5.0	µg/L	J	MDLRL
Phenol	SW8270C	DUP-12-22-21	2112D00-007D	1.7	5.0	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	MKTF-04R	2112d00-002a	1.2	5.0	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	MKTF-01R	2112d00-003a	3.9	10	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	NDD-MW-1	2112d00-004a	0.22	1.0	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	DUP-12-22-21	2112d00-007a	1.3	5.0	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-04R	2112d00-002a	1.4	5.0	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-01R	2112d00-003a	7.5	10	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	NDD-MW-2	2112d00-005a	0.72	1.0	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	DUP-12-22-21	2112d00-007a	1.5	5.0	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Selenium, Total	E200.8	MKTF-01R	2112D00-003F	0.00040	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	DUP-12-22-21	2112D00-007F	0.00068	0.0010	mg/L	J	MDLRL
Styrene	SW8260B	MKTF-01R	2112d00-003a	1.7	10	ug/L	J	MDLRL
Toluene	SW8260B	MKTF-04R	2112d00-002a	2.9	5.0	µg/L	U	FBD, MDLRL
Toluene	SW8260B	NDD-MW-1	2112d00-004a	0.33	1.0	µg/L	U	FBD, MDLRL
Toluene	SW8260B	DUP-12-22-21	2112d00-007a	2.3	5.0	µg/L	U	FBD, MDLRL
Toluene	SW8260B	FB-12-22-21	2112d00-006a	0.30	1.0	µg/L	J	MDLRL
TPH DRO	SW8015	EB-12-22-21	2112D00-001C	0.017	0.064	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	FB-12-22-21	2112d00-006a	0.023	0.050	mg/L	J	MDLRL
TPH ORO	SW8015	NDD-MW-1	2112D00-004C	0.061	0.080	mg/L	J	MDLRL
Trichloroethene	SW8260B	MKTF-04R	2112d00-002a	3.3	5.0	µg/L	J	MDLRL
Trichloroethene	SW8260B	DUP-12-22-21	2112d00-007a	3.1	5.0	µg/L	J	MDLRL
Uranium, Total	E200.8	MKTF-01R	2112D00-003F	0.0017	0.0025	mg/L	J	MDLRL
Zinc, Dissolved	E 200.7	NDD-MW-2	2112D00-005G	0.16	0.010	mg/L	J	ERPD-FD
Zinc, Dissolved	E 200.7	EB-12-22-21	2112D00-001G	0.0078	0.010	mg/L	J	ERPD-FD, MDLRL
Zinc, Dissolved	E 200.7	MKTF-04R	2112D00-002G	0.075	0.010	mg/L	JB	DATA-COMP, EBD, ERPD-FD
Zinc, Dissolved	E 200.7	NDD-MW-1	2112D00-004G	0.016	0.010	mg/L	JB	EBD, ERPD-FD
Zinc, Dissolved	E 200.7	DUP-12-22-21	2112D00-007G	0.016	0.010	mg/L	JB	EBD, ERPD-FD
Zinc, Dissolved	E 200.7	MKTF-01R	2112D00-003G	0.0088	0.010	mg/L	U	EBD, ERPD-FD, MDLRL
Zinc, Total	E 200.7	MKTF-04R	2112D00-002F	0.030	0.010	mg/L	J	DATA-COMP, ERPD-FD
Zinc, Total	E 200.7	NDD-MW-2	2112D00-005F	0.014	0.010	mg/L	J	ERPD-FD
Zinc, Total	E 200.7	EB-12-22-21	2112D00-001F	ND	0.010	mg/L	UJ	ERPD-FD
Zinc, Total	E 200.7	MKTF-01R	2112D00-003F	ND	0.010	mg/L	UJ	ERPD-FD
Zinc, Total	E 200.7	NDD-MW-1	2112D00-004F	ND	0.010	mg/L	UJ	ERPD-FD
Zinc, Total	E 200.7	DUP-12-22-21	2112D00-007F	0.0085	0.010	mg/L	J	ERPD-FD, MDLRL

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-002 Task: 0006	Sample Start Date: 12/28/2021
Date Validated: 02/15/2022	Sample End Date: 12/28/2021
Parameters Included: ▪ Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B ▪ Semivolatile Organic Compounds (SVOC) by SW-846 Methods 8270C and 8270C with Selective Ion Monitoring (SIM) ▪ Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D ▪ TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified ▪ Total and Dissolved Metals by EPA Methods 200.7 and 200.8 ▪ Total and Dissolved Mercury by EPA Method 245.1 ▪ Anions by EPA Method 300.0 ▪ Chemical Oxygen Demand (COD) by EPA Method 410.4 ▪ Total Cyanide by Standard Methods for the Examination of Water and Wastewater (SM) Method 4500 CN E ▪ Biochemical Oxygen Demand (BOD) by SM Method 5210B ▪ E.Coli and Total Coliforms by SM Method 9223B	
Laboratory Project ID: 2112E16	
Data Validator: Daran O'Hollearn, Lead Project Scientist	
Reviewer: Mike Phillips, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, with additional data from Pace Analytical National of Mount Juliet, Tennessee evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Laboratory duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

Tier II Data Validation Report Summary

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Equipment blanks
- Field blanks
- Trip blanks

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
EB-12-28-21	2112E16-001
MKTF-16	2112E16-002
PW-4	2112E16-003
EP-8	2112E16-004
FB-12-28-21	2112E16-005
DUP-12-28-21	2112E16-006
Trip Blank	2112E16-007

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ⊗ Initial and Continuing Calibrations (Items 9 and 10)
- ✓ Laboratory Blanks (Items 11 and 12)
- ✓ MS/MSD (Items 13 and 14)
- ⊗ LCS/LCSD (Items 15 and 16)
- ✓ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Field, Equipment, and Trip Blanks (Items 18 and 19)
- ✓ Field Duplicates (Items 20 and 21)
- ✓ Laboratory Duplicates (Item 22)
- ✓ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
JB	Estimated concentration due to blank contamination
U	Evaluated to be undetected at the reporting limit
UJ	Estimated reporting limit

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 289 data points. The data completeness calculation does not include any submitted blank sample results. Data points were not rejected. The data completeness measure for this data package is calculated to be 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST

1. Was the report free of non-conformances identified by the laboratory? No

Comments: The laboratory noted the following analytical non-conformances related to this data set.

Method 8270: Pyridine is reported with an "E" flag. The "E" flag is used to represent an estimated value. Pyridine was not detected in the sample, but the calibration curve for this compound did not meet the method requirements.

“S" flags denote that the sample surrogate or spike result is outside of the acceptable limits due to sample dilution or matrix interferences.

2. Were the data free of data qualification flags and/or notes used by the laboratory? If no, define. No

Comments: The laboratory used the following data qualification flags with this data set.

D – Sample diluted due to matrix.

E – Estimated value.

J – Analyte detected below quantitation limits.

P – Sample pH not in range.

P1 – RPD value not applicable for sample concentrations less than 5 times the reporting limit.

R – RPD% outside of range.

S – % Recovery outside of range due to dilution or matrix.

* – Value exceeds maximum contaminant level.

3. Were sample CoC forms and custody procedures complete? Yes

Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.

4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable? Yes

Comments: The detection limits appeared to be acceptable. The following dilutions were applied.

Method	Sample(s)	Analyte(s)	Dilution Factor
8260B	EP-8	VOCs	2
200.8	PW-4, DUP-12-2-21	Dissolved Metals	5
300.0	MKTF-16	Anions	5
200.7	MKTF-16	Total Iron	10
8270C	MKTF-16, EP-8	SVOCs	10
9223B	EP-8	E.Coli, Total Coliform	10
200.7	EP-8	Dissolved Iron	20
200.7	EP-8	Dissolved and Total Metals	50
200.8	EP-8	Dissolved and Total Metals	100
300.0	EP-8	Fluoride, Nitrate as N	100
300.0	EP-8	Bromide, Nitrite as N, Sulfate	1,000
410.4	EP-8	COD	1,000
300.0	EP-8	Chloride	20,000

VALIDATION CRITERIA CHECKLIST	
5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC?	No
Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC, with the following exception. On the CoC pesticides were requested to be analyzed for sample EP-8, the laboratory did not report.	
6. Were samples received in good condition within method-specified requirements?	No
Comments: Samples were received on ice, in good condition, and with the cooler temperatures both within and outside the recommended temperature range of 4°C ± 2°C at 0.8°C, 2.0°C, and 3.2°C as noted on the CoC and Sample Log-in Check List. Samples transferred to Pace Analytical National of Mount Juliet, Tennessee were received in good condition with the cooler temperature within the recommended range at 3.6°C as noted on the Sample Receipt Checklist. The cooler temperature below 2.0°C was judged as acceptable since the laboratory did not report the sample containers as broken or frozen. A preserved vial was submitted for the Method 8260B analysis for sample EP-8 but the pH at the time of analysis was greater than 2. Following EPA defined actions, the holding time for this sample was reduced from 14 days to 7 days from sampling to analysis.	
7. Were samples extracted/digested and analyzed within method-specified or technical holding times?	Yes
Comments: The samples were extracted/digested and analyzed within method-specific and reduced holding times.	
8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil.	Yes
Comments: The results were reported in concentration units of micrograms per liter (µg/L), milligrams per liter (mg/L), and most probable number per 100 mL (MPN/100mL), which were acceptable for the sample matrix and the analyses requested.	
9. Did the laboratory provide any specific initial and/or continuing calibration results?	No
Comments: Detailed initial and continuing calibration data were not included as part of this data set.	
10. If initial and/or continuing calibration results were provided, were the results within acceptable limits?	No
Comments: Detailed initial and continuing calibration data were not included as part of this data set. **For sample EP-8, the laboratory applied the E qualifier to the pyridine result in Method 8270C indicating that this compound was recovered outside the laboratory acceptance limits for the continuing calibration. Pyridine was not detected in sample EP-8, and this result was qualified with a UJ flag.**	
11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method?	Yes
Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.	
12. Were target analytes reported as not detected in the laboratory blanks?	No
Comments: Target analytes were reported as not detected in the laboratory blanks, with the following, exception. DRO was detected in the laboratory blank for Method 8015D batch 64796 at a concentration of 0.017 mg/L. Non-detections of this analyte in the associated samples and results greater than ten times the blank concentration did not require qualification.	

VALIDATION CRITERIA CHECKLIST

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batches. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
200.7	Total Metals	64812	Not Prepared
200.7	Dissolved Metals	B84839	EB-12-28-21
200.8	Total Metals	64812	EB-12-28-21
200.8	Dissolved Metals	A84886	EB-12-28-21
200.8	Dissolved Metals	A84953	MKTF-16
200.8	Dissolved Metals	B84912	Not Prepared
245.1	Dissolved and Total Mercury	65003	Not Prepared
245.1	Total Mercury	65021	Not Prepared
300.0	Anions	R84860	Not Prepared
300.0	Chloride	R85057	Not Prepared
410.4	COD	WG1796965	Not Associated
4500CN E	Cyanide	WG1796773	Not Associated
4500CN E	Cyanide	WG1797070	DUP-12-28-21
5210B	BOD	64772	Not Prepared
8015D	TPH DRO and MRO	64796	Not Prepared
8015D	GRO	G84851	Not Prepared
8015D	GRO	G84952	Not Prepared
8260B	VOCs	R84851	Not Prepared
8260B	VOCs	R84952	Not Prepared
8270C	SVOCs	64785	Not Prepared
8270 SIM	SVOCs	64771	Not Prepared
8270 SIM	SVOCs	64805	Not Prepared
9223B	E.Coli, Total Coliforms	64765	Not Prepared

Not Associated – The MS sample source was not associated with this project.
Not Prepared – Matrix spikes were not prepared for this batch.

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? Yes

Comments: The percent recoveries and RPDs for MS/MSDs prepared from project samples were within data validation and laboratory QC limits.

The percent recoveries and RPD values for MS/MSDs prepared from non-project samples were evaluated and considered, but data were not qualified based on those results since matrix similarity to project samples could not be guaranteed.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

VALIDATION CRITERIA CHECKLIST

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? No

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits., with the following exceptions.

The LCS/LCSD RPD values for 1-methylnaphthalene and 2-methylnaphthalene by Method 8270SIM in batch 64805 exceeded the QC limits of 33.1% and 35.4% at 35.1% and 38.3%, respectively. The analytes 1-methylnaphthalene and 2-methylnaphthalene were not detected in the associated samples. These results were qualified as UJ due to evidence of poor precision.

17. Were surrogate recoveries within laboratory QC limits? No

Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions.

The SVOC results for MKTF-16 and EP-8 were not qualified based on the surrogate non-conformances in the Method 8270C and/or Method 8270SIM analyses since the applied dilution of 10 times resulted in surrogate concentrations below routinely calibrated levels, and those results were deemed unreliable and possibly inaccurate.

Qualification of sample data was not required based on surrogate non-conformances in QC samples as the environmental samples were evaluated based on their specific surrogate recoveries.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One trip blank sample, Trip Blank, one field blank sample, FB-12-28-21, and one equipment blank sample, EB-12-18-21, were collected as part of this sample set.

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
Trip Blank	**8260B**	**Chloromethane**	**0.47 µg/L**
FB-12-28-21	**8260B**	**Acetone**	**3.50 µg/L**
FB-12-28-21	8260B	Chloromethane	0.74 µg/L
EB-12-28-21	**200.7**	**Dissolved Zinc**	**0.0046 mg/L**
EB-12-28-21	**200.8**	**Dissolved Uranium**	**0.00038 mg/L**
EB-12-28-21	300.0	Nitrate as N	0.061 mg/L
EB-12-28-21	8260B	Acetone	3.60 µg/L
EB-12-28-21	8260B	Chloromethane	0.61 µg/L

Detections of acetone, chloromethane, and dissolved uranium in the associated samples that were less than the blank results and/or less than the applicable reporting limits were assigned U qualifiers. Detections of dissolved zinc and dissolved uranium in the associated samples that were greater than the reporting limits but less than 10 times the blank results were assigned JB qualifiers. Non-detections of the identified analytes in the associated samples and detections that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

VALIDATION CRITERIA CHECKLIST

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample DUP-12-28-2021 was collected as a field duplicate of sample PW-4.

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? Yes

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples.

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? N/A

Comments: Laboratory duplicates were prepared for these analyses, and the laboratory duplicate sample sources are summarized in the following table.

Method	Analytes	Batch	Laboratory Duplicate Sample Source
410.4	COD	WG1796965	Not Associated
4500CN E	Cyanide	WG1796773	Not Associated
4500CN E	Cyanide	WG1797070	Not Associated

Not Associated – The laboratory duplicate sample source was not associated with this project.

The RPD values for laboratory duplicate samples prepared from non-project samples were evaluated and considered, but data were not qualified based on these results since matrix similarity to project samples could not be guaranteed.

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? Yes

Comments: Target analytes were not reported by more than one method in this data set, with the following exceptions.

Target analytes 1,4-dichlorobenzene, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were reported by both Method 8260B and Method 8270C. These analytes were reported as not detected by both methods.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
PW-4	Manganese	0.0051	0.0052	0.0020 / 0.0020	mg/L	1.9 %
EP-8	Manganese	15	16	0.10 / 0.10	mg/L	6.5 %
DUP-12-28-21	Manganese	0.0050	0.0052	0.0020 / 0.0020	mg/L	3.9 %
EB-12-28-21	Uranium	ND	0.00038	0.00050 / 0.00050	mg/L	----- ♦
PW-4	Uranium	0.0015	0.0017	0.00050 / 0.0025	mg/L	12.5% ♦
EB-12-28-21	Zinc	ND	0.0046	0.010 / 0.010	mg/L	----- ♦
PW-4	Zinc	0.013	0.019	0.010 / 0.010	mg/L	37.5% ♦

VALIDATION CRITERIA CHECKLIST

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
DUP-12-28-21	Zinc	0.011	0.017	0.010 / 0.010	mg/L	42.9% ♦

----- *RPD could not be calculated.*

♦ *= One or both of the detections were less than 2 times the applicable reporting limits, and qualification of data was not required.*

The differences for the corresponding analytical results were within five times the applicable reporting limits, and validation action was not required, or the differences between the results were less than 30% indicating that the data were within the measurement uncertainty for the methods, and qualification of results was not required based on the analytical inconsistencies.

FIELD DUPLICATE SUMMARY

Client Sample ID: PW-4 Field Duplicate Sample ID: DUP-12-28-21				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Barium, Dissolved	E 200.7	0.014 mg/L	0.014 mg/L	0.0%
Barium, Total	E 200.7	0.014 mg/L	0.014 mg/L	0.0%
Iron, Dissolved	E 200.7	0.16 mg/L	0.16 mg/L	0.0%
Iron, Total	E 200.7	0.17 mg/L	0.18 mg/L	5.7%
Manganese, Dissolved	E 200.7	0.0052 mg/L	0.0052 mg/L	0.0%
Manganese, Total	E 200.7	0.0051 mg/L	0.0050 mg/L	2.0%
Zinc, Dissolved	E 200.7	0.019 mg/L	0.017 mg/L	11.1% +/-RL
Zinc, Total	E 200.7	0.013 mg/L	0.011 mg/L	16.7% +/-RL
Arsenic, Dissolved	E200.8	0.0011 mg/L	0.00094 mg/L	15.7% +/-RL
Arsenic, Total	E200.8	0.0014 mg/L	0.0013 mg/L	7.4% +/-RL
Selenium, Total	E200.8	0.00093 mg/L	0.00079 mg/L	16.3% +/-RL
Uranium, Dissolved	E200.8	0.0017 mg/L	0.0014 mg/L	19.4% +/-RL
Uranium, Total	E200.8	0.0015 mg/L	0.0014 mg/L	6.9%

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
EBD	Equipment blank detection
ERPD-LCS	The LCS/LCSD RPD exceeded the upper acceptable limit indicating poor precision.
FBD	Field blank detection
TBD	Trip blank detection
HDRRF	The %D between the initial calibration RRF and the opening CCV RRF was outside the acceptable limits.
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,2,4-Trimethylbenzene	SW8260B	EP-8	2112e16-004a	1.8	2.0	µg/L	J	MDLRL
1-Methylnaphthalene	SW8270C	PW-4	2112e16-003d	ND	0.1	µg/L	UJ	ERPD-LCS
1-Methylnaphthalene	SW8270C	DUP-12-28-21	2112e16-006d	ND	0.1	µg/L	UJ	ERPD-LCS
2-Butanone	SW8260B	EP-8	2112e16-004a	13	20	µg/L	J	MDLRL
2-Methylnaphthalene	SW8270C	PW-4	2112e16-003d	ND	0.1	µg/L	UJ	ERPD-LCS
2-Methylnaphthalene	SW8270C	DUP-12-28-21	2112e16-006d	ND	0.1	µg/L	UJ	ERPD-LCS
Acetone	SW8260B	EB-12-28-21	2112e16-001a	3.6	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	FB-12-28-21	2112e16-005a	3.5	10	µg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-16	2112E16-002G	0.00091	0.0010	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	PW-4	2112E16-003G	0.0011	0.0050	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	DUP-12-28-21	2112E16-006G	0.00094	0.0050	mg/L	J	MDLRL
Bromomethane	SW8260B	EP-8	2112e16-004a	4.0	6.0	µg/L	J	MDLRL
Carbon Disulfide	SW8260B	EP-8	2112e16-004a	2.9	20	µg/L	J	MDLRL
Chloromethane	SW8260B	Trip Blank	2112e16-007a	0.47	3.0	µg/L	J	MDLRL
Chloromethane	SW8260B	EB-12-28-21	2112e16-001a	0.61	3.0	µg/L	U	MDLRL, TBD
Chloromethane	SW8260B	MKTF-16	2112e16-002a	0.46	3.0	µg/L	U	MDLRL, TBD

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Chloromethane	SW8260B	FB-12-28-21	2112e16-005a	0.74	3.0	µg/L	U	MDLRL, TBD
Chromium, Total	E 200.7	MKTF-16	2112E16-002F	0.0033	0.006	mg/L	J	MDLRL
Iron, Total	E 200.7	EP-8	2112E16-004F	0.78	2.5	mg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-16	2112E16-002G	0.000065	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	EP-8	2112E16-004F	0.0067	0.050	mg/L	J	MDLRL
Nitrogen, Nitrate	E300	EB-12-28-21	2112E16-001E	0.061	0.10	mg/L	J	MDLRL
n-Propylbenzene	SW8260B	MKTF-16	2112e16-002a	0.28	1.0	µg/L	J	MDLRL
Pyridine	SW8270C	EP-8	2112E16-004D	ND	400	µg/L	UJ	HDRRF
Selenium, Dissolved	E200.8	MKTF-16	2112E16-002G	0.00049	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-16	2112E16-002F	0.00051	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	PW-4	2112E16-003F	0.00093	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	EP-8	2112E16-004F	0.076	0.10	mg/L	J	MDLRL
Selenium, Total	E200.8	DUP-12-28-21	2112E16-006F	0.00079	0.001	mg/L	J	MDLRL
Uranium, Dissolved	E200.8	MKTF-16	2112E16-002G	0.0012	0.0005	mg/L	JB	EBD
Uranium, Dissolved	E200.8	PW-4	2112E16-003G	0.0017	0.0025	mg/L	U	EBD, MDLRL
Uranium, Dissolved	E200.8	EP-8	2112E16-004G	0.030	0.050	mg/L	U	EBD, MDLRL
Uranium, Dissolved	E200.8	DUP-12-28-21	2112E16-006G	0.0014	0.0025	mg/L	U	EBD, MDLRL
Uranium, Dissolved	E200.8	EB-12-28-21	2112E16-001G	0.00038	0.00050	mg/L	J	MDLRL
Uranium, Total	E200.8	EP-8	2112E16-004F	0.033	0.050	mg/L	J	MDLRL
Zinc, Dissolved	E 200.7	MKTF-16	2112E16-002G	0.029	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	PW-4	2112E16-003G	0.019	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	DUP-12-28-21	2112E16-006G	0.017	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	EB-12-28-21	2112E16-001G	0.0046	0.010	mg/L	J	MDLRL

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-001 Task: 0016	Sample Start Date: 03/05/2021
Date Validated: 01/31/2022	Sample End Date: 03/05/2021
Parameters Included: ▪ Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B ▪ 1,2-Dibromoethane (EDB) by EPA Method 504.1 ▪ Semivolatile Organic Compounds (SVOC) by SW-846 Methods 8270C and 8270C with Selective Ion Monitoring (SIM) ▪ Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D ▪ TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified ▪ Total and Dissolved Metals by EPA Methods 200.7 and 200.8 ▪ Total and Dissolved Mercury by EPA Method 245.1 ▪ Anions by EPA Method 300.0	
Laboratory Project ID: 2103354	
Data Validator: Daran O'Hollearn, Lead Project Scientist	
Reviewer: Mike Phillips, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Tier II Data Validation Report Summary

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Field blanks
- Equipment blanks
- Trip blanks

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
MKTF-31	2103354-001
MKTF-40	2103354-002
MKTF-28	2103354-003
MKTF-27	2103354-004
MKTF-25	2103354-005
DUP 3-5-21	2103354-006
EB 3-5-21	2103354-007
FB 3-5-21	2103354-008
TB	2103354-009

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ○ Initial and Continuing Calibrations (Items 9 and 10)
- ⊗ Laboratory Blanks (Items 11 and 12)
- ⊗ MS/MSD (Items 13 and 14)
- ⊗ LCS/LCSD (Items 15 and 16)
- ✓ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Field, Equipment, and Trip Blanks (Items 18 and 19)
- ⊗ Field Duplicates (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)
- ✓ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
J+	The result is an estimated concentration, but may be biased high
UJ	Estimated reporting limit
U	Evaluated to be undetected at the reporting limit
JB	Estimated concentration due to blank contamination

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 1,145 data points. The data completeness calculation does not include any submitted blank sample results. Data points were not rejected. The data completeness measure for this data package is calculated to be 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST

1. Was the report free of non-conformances identified by the laboratory? No

Comments: The laboratory noted the following analytical non-conformances related to this data set.

Method 8015D DRO: The samples listed below had a single contaminant peak that was identified in the QC and the samples listed below. The contaminant peak was manually removed from the summation of the diesel range organics results. The concentration of the contaminant peak, in the samples that was removed, is listed next to the sample name: MKTF-31 (0.03mg/L), MKTF-40 (0.085mg/L), MKTF-28 (0.033mg/L), MKTF-27 (0.02mg/L), MKTF-25 (0.1mg/L), Dup 3-5-21 (0.11mg/L), LCS 58585 (0.06mg/L), LCSD 58585 (0.01mg/L). The laboratory is researching the source of the contamination to prevent this peak from appearing in the future.

2. Were the data free of data qualification flags and/or notes used by the laboratory? No
If no, define.

Comments: The laboratory used the following data qualification flags with this data set.

D – Sample diluted due to matrix.

J – Analyte detected below quantitation limits.

R – % RPD outside of range. *Mistakenly applied according to the DRO LCS/LCSD results in batch 58585.*

S – % Recovery outside of range due to dilution or matrix.

* – Value exceeds Maximum Contaminant Level.

3. Were sample CoC forms and custody procedures complete? Yes

Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.

4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable? Yes

Comments: The detection limits appeared to be acceptable. The following dilutions were applied.

Method	Sample(s)	Analyte(s)	Dilution Factor
200.7	Multiple Samples	Total and Dissolved Metals	5
200.8	Multiple Samples	Total and Dissolved Metals	5
300.0	Multiple Samples	Select Anions	5
8015D	MKTF-31	GRO	5
8260B	MKTF-31	VOC	5
200.7	Multiple Samples	Total and Dissolved Metals	10
8015D	MKTF-25	GRO	10
8260B	MKTF-25	VOC	10
300.0	Multiple Samples	Nitrite, Sulfate	20
300.0	MKTF-31, MKTF-28, MKTF-25	Chloride	50
300.0	MKTF-40, MKTF-27, DUP 3-5-21	Sodium	50
300.0	MKTF-40, MKTF-27, DUP 3-5-21	Chloride	500

5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC? Yes

Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.

VALIDATION CRITERIA CHECKLIST

6. Were samples received in good condition within method-specified requirements? No

Comments: Samples were received on ice, in good condition, and with the cooler temperatures both within and outside the recommended temperature range of 4°C ± 2°C at 3.1°C, 5.3°C, and 7.5°C as noted on the CoC and Sample Log-in Check List.

The cooler temperature above 6°C was evaluated to be acceptable since the samples were received at the laboratory on the same day (within 24 hours) of the last sample collection time, and temperature equilibrium had not been established.

7. Were samples extracted/digested and analyzed within method-specified or technical holding times? Yes

Comments: The samples were extracted/digested and analyzed within method-specific holding times.

8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil. Yes

Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.

9. Did the laboratory provide any specific initial and/or continuing calibration results? No

Comments: Initial and continuing calibration data were not included as part of this data set.

10. If initial and/or continuing calibration results were provided, were the results within acceptable limits? N/A

Comments: Initial and continuing calibration data were not included as part of this data set.

11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.

12. Were target analytes reported as not detected in the laboratory blanks? No

Comments: Target analytes were reported as not detected in the laboratory blanks, with the following exceptions.

Bis(2-ethylhexyl)phthalate was detected in the laboratory blank for Method 8270C batch 58560 at a concentration of 4.8 µg/L. Sample results detected below the blank concentration and/or the laboratory reporting limit were qualified with a U flag. Non-detections of this analyte in the associated samples did not require qualification.

GRO was detected in the laboratory blanks for Method 8015D batches B75848 and B75890 at concentrations of 0.023 mg/L and 0.022mg/L, respectively. Sample results detected below or equal to the blank concentration and/or the laboratory reporting limit were qualified with a U flag. Detection of this analyte in the associated samples greater than ten times the blank concentration did not require qualification.

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batches. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
200.7	Total Metals	58618	MKTF-40
200.7	Total and Dissolved Metals	A75766	Not Prepared
200.7	Total and Dissolved Metals	A75785	Not Prepared
200.7	Dissolved Metals	B75766	EB 3-5-21

VALIDATION CRITERIA CHECKLIST

Method	Analytes	Batch	MS Sample Source
200.8	Total Metals	58618	MKTF-31
200.8	Dissolved Metals	A75856	Not Prepared
200.8	Total Metals	A75881	Not Prepared
200.8	Dissolved Metals	B75975	EB 3-5-21
245.1	Dissolved and Total Mercury	58666	DUP 3-5-21
300.0	Anions	R75758	Not Prepared
300.0	Chloride	R75784	Not Prepared
504.1	EDB	58710	Not Prepared
504.1	EDB	58711	Not Prepared
8015D	DRO and MRO	58585	Not Prepared
8015D	GRO	B75848	Not Prepared
8015D	GRO	B75890	EB 3-5-21
8260B	VOC	A75848	Not Prepared
8260B	VOC	A75890	EB 3-5-21
8270C	SVOC	58560	Not Prepared
8270C SIM	SVOC	58576	Not Prepared

Not Prepared – Matrix spikes were not prepared/reported for this batch.

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? No

Comments: The percent recoveries and RPDs for MS/MSDs prepared from project samples were within data validation and laboratory QC limits or were not applicable because the unspiked amount was more than four times the spike added, with the following exceptions.

The MS and MSD percent recoveries for total iron in Method 200.7 batch 58618 were outside the QC limits of 75-125% at 167% and 155%, respectively. Total iron was detected in the associated samples. These total iron results were qualified as J+ due to potential high bias.

The MSD percent recovery for total arsenic in Method 200.8 batch 58618 was outside the QC limits of 75-125% at 126%. The detected total arsenic results in the associated samples in batch 58618 were qualified as J+ due to potential high bias. Non-detected results for total arsenic in this batch did not require qualification.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

VALIDATION CRITERIA CHECKLIST

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits — No

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPD values were within laboratory QC limits, with the following exceptions.

Method	Analyte	Batch	LCS Recovery	LCS/LCSD QC Limits
200.7	**Total Nickel**	**A75766**	**59.6%**	**70-130%**
200.7	**Total Aluminum**	**58618**	**133%**	**70-130%**
200.7	**Total Iron**	**58618**	**135%**	**70-130%**
200.7	**Dissolved Cadmium**	**B75766**	**65.1%**	**70-130%**

Detections of total aluminum and total iron in the associated samples were qualified as J+ due to evidence of potential high bias.

The LCS percent recoveries for total nickel and dissolved cadmium were less than the lower laboratory QC limits. These analytes were not detected in the associated samples and were qualified as UJ due to evidence of potential low bias.

The laboratory mistakenly applied the 'R' qualifier to the DRO LCS/LCSD results in batch 58585. Qualification of data was not required.

17. Were surrogate recoveries within laboratory QC limits? — No

Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions.

Since Method 8270 SIM surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes in a given fraction (acid or base/neutral) when two or more surrogates from the same fraction (acid or base/neutral) were outside the acceptance range. This condition did not exist for the sample MKTF-25, and qualification of sample data was not required.

Qualification of sample data was not required based on surrogate non-conformances in QC samples as the environmental samples were evaluated based on their specific surrogate recoveries.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? — Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One trip blank sample, TB, one field blank sample, FB 3-5-21, and one equipment blank sample, EB 3-5-21, were collected as part of this sample set.

VALIDATION CRITERIA CHECKLIST

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
TB	8260B	2-Butanone	1.1 µg/L
TB	**8260B**	**Acetone**	**3.1 µg/L**
FB 3-5-21	8260B	Acetone	3.0 µg/L
FB 3-5-21	**8260B**	**Toluene**	**0.24 µg/L**
EB 3-5-21	**200.7**	**Dissolved Zinc**	**0.012 mg/L**
EB 3-5-21	**300.0**	**Nitrate**	**0.039 mg/L**
EB 3-5-21	8015D	GRO	0.023 mg/L
EB 3-5-21	8260B	Acetone	2.6 µg/L
EB 3-5-21	8260B	Toluene	0.22 µg/L

Sample results detected below the blank concentration and/or the laboratory reporting limit were qualified with a U flag. Results greater than the blank detection and/or the laboratory reporting limit but less than 10 times the blank concentration were qualified with a JB flag. Non-detections of the identified analytes in the associated samples and detections that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

The GRO results for the samples in batches B75848 and B75890 were previously qualified due to laboratory blank contamination; therefore, additional qualification due to the equipment blank contamination was not required.

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample DUP 3-5-21 was collected as a field duplicate of sample MKTF-40.

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? No

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples, with the following exception.

The RPD value for total manganese exceeded the data validation limit of 30% at 30.1% which was evidence of poor precision. The total manganese results were qualified as J for samples MKTF-40 and DUP 3-5-21.

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? N/A

Comments: Laboratory duplicate samples were not prepared/reported for this sample set.

VALIDATION CRITERIA CHECKLIST

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? Yes

Comments: Target analytes were not reported by more than one method in this data set, with the following exceptions.

Target analytes 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1-methylnaphthalene, 2-methylnaphthalene, hexachlorobutadiene, and naphthalene were reported by both Method 8260B and Method 8270C. 1,2-Dibromoethane was reported from analyses by both Method 8260B and Method 504.1. These analytes were reported as not detected by both methods, or one or both results were within 5 times the applicable reporting limit.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
MKTF-40	Cobalt	ND	0.0028	0.030 / 0.0060	mg/L	----- ♦
MKTF-27	Cobalt	ND	0.0041	0.030 / 0.0060	mg/L	----- ♦
MKTF-27	Copper	ND	0.0071	0.030 / 0.0060	mg/L	----- ♦
MKTF-25	Copper	0.0049	0.0095	0.0060 / 0.0060	mg/L	63.9% ♦
DUP 3-5-2	Copper	ND	0.0055	0.030 / 0.0060	mg/L	----- ♦
MKTF-40	Nickel	ND	0.0051	0.050 / 0.010	mg/L	----- ♦
DUP 3-5-2	Nickel	ND	0.0071	0.050 / 0.010	mg/L	----- ♦
MKTF-31	Selenium	0.00067	0.0010	0.0010 / 0.0010	mg/L	39.5% ♦
MKTF-40	Silver	ND	0.0022	0.025 / 0.0050	mg/L	----- ♦
MKTF-27	Silver	ND	0.0024	0.025 / 0.0050	mg/L	----- ♦
DUP 3-5-2	Silver	ND	0.0024	0.025 / 0.0050	mg/L	----- ♦
MKTF-31	Zinc	ND	0.011	0.010 / 0.010	mg/L	----- ♦
MKTF-40	Zinc	ND	0.016	0.050 / 0.010	mg/L	----- ♦
Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
MKTF-25	Zinc	ND	0.0095	0.010 / 0.010	mg/L	----- ♦
DUP 3-5-2	Zinc	ND	0.011	0.050 / 0.010	mg/L	----- ♦
EB 3-5-21	Zinc	ND	0.012	0.010 / 0.010	mg/L	----- ♦

----- *RPD could not be calculated.*

♦ *= One or both of the detections were less than 2 times the applicable reporting limits and qualification of data was not required.*

FIELD DUPLICATE SUMMARY

Client Sample ID: MKTF-40 Field Duplicate Sample ID: DUP 3-5-21				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Aluminum, Dissolved	E 200.7	0.018 mg/L	ND (0.020 mg/L)	DL
Aluminum, Total	E 200.7	1.8 mg/L	1.9 mg/L	5.4%
Barium, Dissolved	E 200.7	0.057 mg/L	0.055 mg/L	3.6%
Barium, Total	E 200.7	0.080 mg/L	0.085 mg/L	6.1%
Boron, Dissolved	E 200.7	2.0 mg/L	2.0 mg/L	0.0%
Boron, Total	E 200.7	2.2 mg/L	2.2 mg/L	0.0%
Calcium, Dissolved	E 200.7	250 mg/L	250 mg/L	0.0%
Cobalt, Dissolved	E 200.7	0.0028 mg/L	ND (0.0060 mg/L)	DL
Copper, Dissolved	E 200.7	ND (0.0060 mg/L)	0.0055 mg/L	DL
Iron, Dissolved	E 200.7	0.017 mg/L	ND (0.020 mg/L)	DL
Iron, Total	E 200.7	0.88 mg/L	0.98 mg/L	10.8%
Magnesium, Dissolved	E 200.7	51 mg/L	49 mg/L	4.0%
Manganese, Dissolved	E 200.7	0.0011 mg/L	0.00073 mg/L	40.4% +/-RL
Manganese, Total	**E 200.7**	**0.031 mg/L**	**0.042 mg/L**	**30.1%**
Nickel, Dissolved	E 200.7	0.0051 mg/L	0.0071 mg/L	32.8% +/-RL
Potassium, Dissolved	E 200.7	5.8 mg/L	6.1 mg/L	5.0%
Silver, Dissolved	E 200.7	0.0022 mg/L	0.0024 mg/L	8.7% +/-RL
Sodium, Dissolved	E 200.7	2,200 mg/L	2,100 mg/L	4.7%
Zinc, Dissolved	E 200.7	0.016 mg/L	0.011 mg/L	37.0% +/-RL
Lead, Total	E200.8	0.00096 mg/L	0.0011 mg/L	13.6% +/-RL
Bromide	E300	1.4 mg/L	1.4 mg/L	0.0%
Chloride	E300	3,200 mg/L	3,000 mg/L	6.5%
Nitrogen, Nitrate	E300	0.14 mg/L	0.13 mg/L	7.4% +/-RL
Sulfate	E300	520 mg/L	390 mg/L	28.6%
TPH GRO	SW8015	0.024 mg/L	0.023 mg/L	4.3% +/-RL
1,1-Dichloroethane	SW8260B	0.88 µg/L	0.87 µg/L	1.1% +/-RL
MTBE	SW8260B	1.2 µg/L	0.96 µg/L	22.2% +/-RL
Bis(2-ethylhexyl)phthalate	SW8270C	4.6 µg/L	4.8 µg/L	4.3% +/-RL

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD value for total manganese exceeded the data validation limit of 30% at 30.1% which was evidence of poor precision. The total manganese results were qualified as J for samples MKTF-40 and DUP 3-5-21.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
EBD	Equipment blank detection
ERPD-FD	High field duplicate RPD.
FBD	Field blank detection
HR-LCS	The LCS and/or LCSD percent recovery was greater than the upper acceptable limit indicating a possible high bias.
HR-MS	The MS and/or MSD percent recovery was greater than the upper acceptable limit indicating possible matrix interference.
LR-LCS	The LCS and/or LCSD percent recovery was less than the lower acceptable limit indicating a possible low bias.
MBD	Method blank detection
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.
TBD	Trip blank detection

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,1,1-Trichloroethane	SW8260B	MKTF-31	2103354-001a	2.9	5.0	µg/L	J	MDLRL
1,1,2-Trichloroethane	SW8260B	MKTF-31	2103354-001a	2.5	5.0	µg/L	J	MDLRL
1,1,2-Trichloroethane	SW8260B	MKTF-25	2103354-005a	2.3	10	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	MKTF-40	2103354-002a	0.88	1.0	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	MKTF-27	2103354-004a	0.52	1.0	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	DUP 3-5-21	2103354-006a	0.87	1.0	µg/L	J	MDLRL
1,2-Dibromoethane	E504.1	MKTF-31	2103354-001C	0.0065	0.0094	µg/L	J	MDLRL
2-Butanone	SW8260B	TB	2103354-009a	1.1	10	µg/L	J	MDLRL
Acetone	SW8260B	TB	2103354-009a	3.1	10	µg/L	J	MDLRL
Acetone	SW8260B	EB 3-5-21	2103354-007a	2.6	10	µg/L	U	MDLRL, TBD
Acetone	SW8260B	FB 3-5-21	2103354-008a	3.0	10	µg/L	U	MDLRL, TBD
Aluminum, Dissolved	E 200.7	MKTF-40	2103354-002G	0.018	0.020	mg/L	J	MDLRL
Aluminum, Total	E 200.7	MKTF-31	2103354-001F	2.0	0.20	mg/L	J+	HR-LCS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Aluminum, Total	E 200.7	MKTF-40	2103354-002F	1.8	0.10	mg/L	J+	HR-LCS
Aluminum, Total	E 200.7	MKTF-28	2103354-003E	0.69	0.020	mg/L	J+	HR-LCS
Aluminum, Total	E 200.7	MKTF-27	2103354-004F	1.3	0.100	mg/L	J+	HR-LCS
Aluminum, Total	E 200.7	MKTF-25	2103354-005F	3.2	0.20	mg/L	J+	HR-LCS
Aluminum, Total	E 200.7	DUP 3-5-21	2103354-006F	1.9	0.10	mg/L	J+	HR-LCS
Arsenic, Dissolved	E200.8	MKTF-31	2103354-001G	0.00054	0.0010	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-31	2103354-001F	0.00063	0.0010	mg/L	J+	HR-MS, MDLRL
Arsenic, Total	E200.8	MKTF-25	2103354-005F	0.0027	0.0050	mg/L	J+	HR-MS, MDLRL
Arsenic, Total	E200.8	MKTF-28	2103354-003E	0.0012	0.0010	mg/L	J+	HR-MS
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-40	2103354-002d	4.6	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-25	2103354-005d	4.9	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	DUP 3-5-21	2103354-006d	4.8	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	EB 3-5-21	2103354-007c	4.7	10	µg/L	U	MBD, MDLRL
Cadmium, Dissolved	E 200.7	MKTF-31	2103354-001G	ND	0.0020	mg/L	UJ	LR-LCS
Cadmium, Dissolved	E 200.7	MKTF-40	2103354-002G	ND	0.0020	mg/L	UJ	LR-LCS
Cadmium, Dissolved	E 200.7	MKTF-28	2103354-003F	ND	0.0020	mg/L	UJ	LR-LCS
Cadmium, Dissolved	E 200.7	MKTF-27	2103354-004G	ND	0.0020	mg/L	UJ	LR-LCS
Cadmium, Dissolved	E 200.7	MKTF-25	2103354-005G	ND	0.0020	mg/L	UJ	LR-LCS
Cadmium, Dissolved	E 200.7	DUP 3-5-21	2103354-006G	ND	0.0020	mg/L	UJ	LR-LCS
Cadmium, Dissolved	E 200.7	EB 3-5-21	2103354-007F	ND	0.0020	mg/L	UJ	LR-LCS
Carbazole	SW8270C	MKTF-25	2103354-005d	3.4	5.0	µg/L	J	MDLRL
cis-1,2-Dichloroethene	SW8260B	MKTF-31	2103354-001a	4.9	5.0	µg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	MKTF-40	2103354-002G	0.0028	0.0060	mg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	MKTF-27	2103354-004G	0.0041	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-25	2103354-005F	0.0054	0.0060	mg/L	J	MDLRL
Copper, Dissolved	E 200.7	DUP 3-5-21	2103354-006G	0.0055	0.0060	mg/L	J	MDLRL
Copper, Total	E 200.7	MKTF-25	2103354-005F	0.0049	0.0060	mg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Iron, Dissolved	E 200.7	MKTF-40	2103354-002G	0.017	0.020	mg/L	J	MDLRL
Iron, Dissolved	E 200.7	MKTF-27	2103354-004G	0.011	0.020	mg/L	J	MDLRL
Iron, Total	E 200.7	MKTF-31	2103354-001F	0.65	0.050	mg/L	J+	HR-LCS, HR-MS
Iron, Total	E 200.7	MKTF-40	2103354-002F	0.88	0.25	mg/L	J+	HR-LCS, HR-MS
Iron, Total	E 200.7	MKTF-28	2103354-003E	0.38	0.05	mg/L	J+	HR-LCS, HR-MS
Iron, Total	E 200.7	MKTF-27	2103354-004F	0.70	0.25	mg/L	J+	HR-LCS, HR-MS
Iron, Total	E 200.7	MKTF-25	2103354-005F	2.3	0.50	mg/L	J+	HR-LCS, HR-MS
Iron, Total	E 200.7	DUP 3-5-21	2103354-006F	0.98	0.25	mg/L	J+	HR-LCS, HR-MS
Lead, Dissolved	E200.8	MKTF-31	2103354-001G	0.000045	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-28	2103354-003F	0.00015	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-25	2103354-005G	0.000046	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-40	2103354-002F	0.00096	0.0025	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-28	2103354-003E	0.00037	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-27	2103354-004F	0.00044	0.0025	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-25	2103354-005F	0.0015	0.0025	mg/L	J	MDLRL
Lead, Total	E200.8	DUP 3-5-21	2103354-006F	0.0011	0.0025	mg/L	J	MDLRL
Manganese, Dissolved	E 200.7	MKTF-40	2103354-002G	0.0011	0.0020	mg/L	J	MDLRL
Manganese, Dissolved	E 200.7	DUP 3-5-21	2103354-006G	0.00073	0.0020	mg/L	J	MDLRL
Manganese, Total	E 200.7	MKTF-40	2103354-002F	0.031	0.010	mg/L	J	ERPD-FD
Manganese, Total	E 200.7	DUP 3-5-21	2103354-006F	0.042	0.010	mg/L	J	ERPD-FD
MTBE	SW8260B	MKTF-28	2103354-003a	0.60	1.0	µg/L	J	MDLRL
MTBE	SW8260B	DUP 3-5-21	2103354-006a	0.96	1.0	µg/L	J	MDLRL
Nickel, Dissolved	E 200.7	MKTF-40	2103354-002G	0.0051	0.010	mg/L	J	MDLRL
Nickel, Dissolved	E 200.7	DUP 3-5-21	2103354-006G	0.0071	0.010	mg/L	J	MDLRL
Nickel, Total	E 200.7	EB 3-5-21	2103354-007E	ND	0.010	mg/L	UJ	LR-LCS
Nickel, Total	E 200.7	MKTF-31	2103354-001F	0.0050	0.010	mg/L	J	MDLRL
Nickel, Total	E 200.7	MKTF-28	2103354-003E	0.0038	0.010	mg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Nickel, Total	E 200.7	MKTF-27	2103354-004F	0.027	0.050	mg/L	J	MDLRL
Nitrogen, Nitrate	E300	MKTF-40	2103354-002E	0.14	0.50	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	MKTF-28	2103354-003D	0.12	0.50	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	DUP 3-5-21	2103354-006E	0.13	0.50	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	EB 3-5-21	2103354-007D	0.039	0.10	mg/L	J	MDLRL
Selenium, Dissolved	E200.8	MKTF-31	2103354-001G	0.0010	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-31	2103354-001F	0.00067	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-28	2103354-003E	0.00091	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-27	2103354-004F	0.0037	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-31	2103354-001G	0.0014	0.005	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-40	2103354-002G	0.0022	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-27	2103354-004G	0.0024	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-25	2103354-005G	0.0013	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	DUP 3-5-21	2103354-006G	0.0024	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-31	2103354-001F	0.0017	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-25	2103354-005F	0.002	0.0050	mg/L	J	MDLRL
Toluene	SW8260B	EB 3-5-21	2103354-007a	0.22	1.0	µg/L	U	FBD, MDLRL
Toluene	SW8260B	MKTF-25	2103354-005a	2.7	10	µg/L	J	MDLRL
Toluene	SW8260B	FB 3-5-21	2103354-008a	0.24	1.0	µg/L	J	MDLRL
TPH GRO	SW8015	MKTF-31	2103354-001a	0.22	0.25	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	MKTF-40	2103354-002a	0.024	0.050	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	MKTF-28	2103354-003a	0.023	0.050	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	MKTF-27	2103354-004a	0.025	0.050	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	DUP 3-5-21	2103354-006a	0.023	0.050	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	EB 3-5-21	2103354-007a	0.023	0.050	mg/L	U	MBD, MDLRL
Trichloroethene	SW8260B	MKTF-25	2103354-005a	9.8	10	µg/L	J	MDLRL
Vinyl Chloride	SW8260B	MKTF-25	2103354-005a	7.2	10	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Zinc, Dissolved	E 200.7	MKTF-40	2103354-002G	0.016	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	MKTF-31	2103354-001G	0.011	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	DUP 3-5-21	2103354-006G	0.011	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	MKTF-25	2103354-005G	0.0095	0.010	mg/L	U	EBD, MDLRL

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-001 Task: 0016	Sample Start Date: 03/09/2021
Date Validated: 02/07/2022	Sample End Date: 03/09/2021

Parameters Included:

- Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B
- 1,2-Dibromoethane (EDB) by EPA Method 504.1
- Semivolatile Organic Compounds (SVOC) by SW-846 Method 8270C and Method 8270C with Selective Ion Monitoring (SIM)
- Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D
- TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified
- Total and Dissolved Metals by EPA Methods 200.7 and 200.8
- Total and Dissolved Mercury by EPA Method 245.1
- Anions by EPA Method 300.0
- Cyanide by Standard Methods for the Examination of Water and Wastewater (SM) Method 4500 CN E

Laboratory Project ID: 2103470

Data Validator: Daran O'Hollearn, Lead Project Scientist

Reviewer: Mike Phillips, Senior Chemist

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, with additional data from Pace Analytical National of Mount Juliet, Tennessee evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Laboratory duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Tier II Data Validation Report Summary

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Trip blanks
- Field blanks
- Equipment blanks

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
MKTF-24	2103470-001
OAPIS-1	2103470-002
MKTF-29	2103470-003
MKTF-30	2103470-004
KA-3	2103470-005
NAPIS-3	2103470-006
FB 3/9/2021	2103470-007
DUP 3/9/2021	2103470-008
EB 3/9/2021	2103470-009
Trip Blank	2103470-010

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ✓ Initial and Continuing Calibrations (Items 9 and 10)
- ⊗ Laboratory Blanks (Items 11 and 12)
- ✓ MS/MSD (Items 13 and 14)
- ⊗ LCS/LCSD (Items 15 and 16)
- ✓ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Field, Equipment, and Trip Blanks (Items 18 and 19)
- ⊗ Field Duplicates (Items 20 and 21)
- ✓ Laboratory Duplicates (Item 22)
- ⊗ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
J+	The result is an estimated concentration, but may be biased high
J-	The result is an estimated concentration, but may be biased low
UJ	Estimated reporting limit
U	Evaluated to be undetected at the reporting limit
JB	Estimated concentration due to blank contamination
R	Rejected, data not usable

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 1,216 data points. The data completeness calculation does not include any submitted blank sample results. Two data points were rejected. The data completeness measure for this data package is calculated to be 99.84% and is acceptable.

VALIDATION CRITERIA CHECKLIST

1. Was the report free of non-conformances identified by the laboratory? No

Comments: The laboratory noted the following analytical non-conformances related to this data set.

Method 8015D DRO: The samples listed below had a single contaminant peak that was identified in the QC and the samples listed below. The contaminant peak was manually removed from the summation of the diesel range organic results. The concentration of the contaminant peak, in the samples, that was removed is listed next to the sample name: MKTF-29 (0.36mg/L), KA-3 (0.65mg/L), Dup 3-9-21 (1.4mg/L), LCS 58742 (0.07mg/L), and LCSD 58742 (0.02mg/L). We are researching the source of the contamination to prevent this peak from appearing in the future.

Method 504.1: Sample Dup 3-9-21 was preserved with HCL.

2. Were the data free of data qualification flags and/or notes used by the laboratory? No
If no, define.

Comments: The laboratory used the following data qualification flags with this data set.

D – Sample Diluted Due to Matrix.

J – Analyte detected below quantitation limits.

J3 – The associated batch QC was outside the established quality control range for precision.

J6 – The sample matrix interfered with the ability to make any accurate determination; spike value is low.

P1 – RPD value not applicable for sample concentrations less than 5 times the reporting limit.

R – % RPD outside of range.

S – % Recovery outside of range due to dilution or matrix.

* – Value exceeds Maximum Contaminant Level.

3. Were sample CoC forms and custody procedures complete? Yes

Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.

4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable? Yes

Comments: The detection limits appeared to be acceptable. The following dilutions were applied.

Method	Sample(s)	Analyte(s)	Dilution Factor
8015D	OAPIS-1	GRO	2
8260B	OAPIS-1	VOC	2
200.7	Multiple Samples	Select Dissolved and Total Metals	5
200.8	Multiple Samples	Total Metals	5
300.0	Multiple Samples	Select Anions	5
200.7	Multiple Samples	Dissolved Sodium	10
200.7	MKTF-24, DUP 3/9/2021	Total Aluminum	10
8015D	MKTF-24	GRO	10
8260B	MKTF-24	VOC	10
200.7	OAPIS-1	Dissolved Sodium	20
200.7	MKTF-30	Total Aluminum and Iron	20
300.0	Multiple Samples	Select Anions	20
300.0	MKTF-30, DUP 3/9/2021	Chloride	50
Method	Sample(s)	Analyte(s)	Dilution Factor

VALIDATION CRITERIA CHECKLIST

8270C	OAPIS-1	SVOC	50
8260B	MKTF-24	Benzene	100
300.0	MKTF-24, OAPIS-1	Chloride	100
300.0	MKTF-29	Chloride	200

5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC? Yes

Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.

6. Were samples received in good condition within method-specified requirements? No

Comments: Samples were received on ice, in good condition, and with the cooler temperatures within the recommended temperature range of 4°C ± 2°C at 3.4°C, 3.6°C, and 4.1°C as noted on the CoC and Sample Log-in Check List. Samples transferred to Pace National of Mt. Juliet, Tennessee were received in good condition with the cooler temperature outside the recommended range at 1.8°C as noted on the Sample Receipt Checklist.

The cooler temperature below 2.0°C was judged as acceptable since the laboratory did not report the sample containers as broken or frozen.

7. Were samples extracted/digested and analyzed within method-specified or technical holding times? Yes

Comments: The samples were extracted/digested and analyzed within method-specific holding times.

8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil. Yes

Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.

9. Did the laboratory provide any specific initial and/or continuing calibration results? Yes

Comments: Detailed calibration information was not provided as part of this laboratory report, but limited initial and continuing calibration verification summary data were available for Method 4500CN E.

10. If initial and/or continuing calibration results were provided, were the results within acceptable limits? Yes

Comments: The available initial and continuing calibration summary data were within the acceptance limits.

11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.

12. Were target analytes reported as not detected in the laboratory blanks? No

Comments: Target analytes were reported as not detected in the laboratory blanks, with the following exceptions.

Method	Analyte	Batch	Concentration
200.8	Total Selenium	58668	0.00010 mg/L
200.8	Total Thallium	58668	0.0000029 mg/L
300.0	Nitrate as N	R75861	0.020 mg/L
8260B	Methylene Chloride	A76055	0.41 µg/L
Method	Analyte	Batch	Concentration

VALIDATION CRITERIA CHECKLIST

8270C	**Bis(2-ethylhexyl)phthalate**	**58648**	**6.6 µg/L**
8015D	**GRO**	**B75890**	**0.022 mg/L**
8015D	**GRO**	**B76015**	**0.017 mg/L**
8015D	**GRO**	**B76055**	**0.017 mg/L**

Detections of the identified analytes in the associated samples that were less than the blank results and/or less than the applicable reporting limits were assigned U qualifiers. Detections of the identified analytes in the associated samples that were greater than the reporting limits but less than or equal to 10 times the blank results were assigned JB qualifiers. Non-detections of the identified analytes in the associated samples and detections that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batches. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
200.7	Total Metals	58668	MKTF-24
200.7	Dissolved Metals	A75995	Not Prepared
200.8	Total Metals	58668	OAPIS-1
200.8	Dissolved Metals	B75881	EB 3/9/2021
245.1	Total Mercury	58745	MKTF-29
245.1	Dissolved Mercury	58800	Not Prepared
300.0	Anions	R75825	Not Prepared
300.0	Anions	R75861	EB 3/9/2021
4500CN E	Cyanide	WG1633983	Not Associated
504.1	EDB	58711	Not Prepared
8015D	TPH DRO and MRO	58742	Not Prepared
8015D	GRO	B75890	Not Prepared
8015D	GRO	B76015	EB 3/9/2021
8015D	GRO	B76055	Not Prepared
8260B	VOC	A75890	Not Prepared
8260B	VOC	A76015	EB 3/9/2021
8260B	VOC	A76055	Not Prepared
8260B	VOC	C76015	Not Prepared
8270C SIM	SVOC	58646	Not Prepared
8270C	SVOC	58648	Not Prepared

Not Associated – The MS sample source was not associated with this project

Not Prepared – Matrix spikes were not prepared/reported for this batch.

VALIDATION CRITERIA CHECKLIST

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? No

Comments: The percent recoveries and RPDs for MS/MSDs prepared from project samples were within data validation and laboratory QC limits or were not applicable because the unspiked amount was more than four times the spike added, with the following exceptions.

Method	Analyte	Batch	MS Recovery	MSD Recovery	MS/MSD QC Limits
200.8	Total Selenium	58668	129%	----	75-125%
300.0	Bromide	R75861	Acceptable	107%	85.9-106%

Non-detections of total selenium in the associated samples did not require qualification due to the potential high bias. The MSD recovery for bromide was greater than the laboratory QC limits of 85.9-106% at 107%; however, this recovery was within the National Functional Guidelines data validation QC limits of 80-120%. Therefore, qualification of the bromide results was not required.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

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16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? No

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits, with the following exceptions.

Method	Analyte	Batch	LCS Recovery	LCSD Recovery	LCS/LCSD QC Limits	LCS/LCSD RPD	RPD QC Limits
200.7	**Dissolved and Total Beryllium**	**A75995**	**66.7%**	**----**	**70-130%**	**----**	**----**
200.7	**Dissolved and Total Cobalt**	**A75995**	**131%**	**----**	**70-130%**	**----**	**----**
8260B	**Ethylbenzene**	**C76015**	**0%**	**----**	**80-120%**	**----**	**----**
8260B	**MTBE**	**C76015**	**0%**	**----**	**80-120%**	**----**	**----**
8260B	**Total Xylenes**	**C76015**	**0%**	**----**	**80-120%**	**----**	**----**
8270 SIM	**Naphthalene**	**58646**	**Acceptable**	**Acceptable**	**18.5-83.4%**	**21.3%**	**20%**
8270 SIM	**1-Methylnaphthalene**	**58646**	**Acceptable**	**Acceptable**	**15.1-89.6%**	**21.6%**	**20%**
8270 SIM	**2-Methylnaphthalene**	**58646**	**Acceptable**	**Acceptable**	**15.0-90.6%**	**21.9%**	**20%**
8270 SIM	**Acenaphthylene**	**58646**	**Acceptable**	**Acceptable**	**18.2-95.3%**	**22.2%**	**20%**
8270 SIM	**Acenaphthene**	**58646**	**Acceptable**	**Acceptable**	**23.9-90.3%**	**22.5%**	**20%**
8270 SIM	**Fluorene**	**58646**	**Acceptable**	**Acceptable**	**16.8-106%**	**22.5%**	**20%**
8270 SIM	**Phenanthrene**	**58646**	**Acceptable**	**Acceptable**	**23.3-105%**	**23.7%**	**20%**
8270 SIM	**Anthracene**	**58646**	**Acceptable**	**Acceptable**	**15.0-112%**	**22.8%**	**20%**
8270 SIM	Chrysene	58646	107%	99.0%	32.6-96.6%	Acceptable	20%

Detections of dissolved cobalt in the associated samples were qualified as J+ due to evidence of potential high bias. Non-detection of dissolved cobalt and chrysene in the associated samples did not require qualification.

Analytes with LCS percent recoveries that were less than the lower laboratory QC limits were qualified as J- if detected and UJ if not detected in the associated samples due to evidence of potential low bias, and non-detections were qualified with R in the associated samples to indicate rejected (not usable) data based on evidence of extreme low bias (recovery less than 30%).

The analytes with LCS/LCSD RPD values that were above the QC limit were qualified as J for detections and UJ for non-detections for the associated samples to indicate estimated concentrations or estimated reporting limits, respectively, due to evidence of poor precision.

17. Were surrogate recoveries within laboratory QC limits? No

Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions.

Since Method 8270 SIM surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes in a given fraction (acid or base/neutral) when two or more surrogates from the same fraction (acid or base/neutral) were outside the acceptance range. This condition did not exist for the sample MKTF-24, and qualification of sample data was not required.

The SVOC results for sample OAPIS-1 were not qualified based on the surrogate non-conformances in the Method 8270 SIM analyses since the applied dilution of 50 times resulted in surrogate concentrations below routinely calibrated levels, and those results were deemed unreliable and possibly inaccurate.

VALIDATION CRITERIA CHECKLIST

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One trip blank sample, Trip Blank, one field blank sample, FB 3/9/2021, and one equipment blank sample, EB 3/9/2021, were collected as part of this sample set.

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
FB 3/9/2021	8260B	2-Butanone	8.6 µg/L
FB 3/9/2021	**8260B**	**Acetone**	**4.7 µg/L**
EB 3/9/2021	200.7	Dissolved Boron	0.0069 mg/L
EB 3/9/2021	200.7	Dissolved Sodium	0.33 mg/L
EB 3/9/2021	**200.7**	**Dissolved Zinc**	**0.015 mg/L**
EB 3/9/2021	8015D	GRO	0.020 mg/L
EB 3/9/2021	8260B	Acetone	3.30 µg/L
EB 3/9/2021	8270C	Bis(2-ethylhexylphthalate)	6.70 µg/L
EB 3/9/2021	8270C	Di-n-octyl phthalate	9.1 µg/L

Detections of the identified analytes in the associated samples that were less than or equal to the blank results and/or less than the applicable reporting limits were assigned U qualifiers. Non-detections of the identified analytes in the associated samples and detections that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

The GRO results for the samples in batch B76015 were previously qualified due to laboratory blank contamination; therefore, additional qualification due to the equipment blank contamination was not required.

The bis(2-ethylhexyl)phthalate results for the samples in batch 58648 were previously qualified due to laboratory blank contamination; therefore, additional qualification due to the equipment blank contamination was not required.

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample DUP 3/9/2021 was collected as a field duplicate of sample MKTF-30.

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? No

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples, with the following exceptions.

The RPD values for multiple analytes exceeded the data validation limit of 30%. These analyte results were assigned J qualifiers for samples MKTF-30 and DUP 3/9/2021 due to evidence of poor precision.

The RPD value for dissolved manganese greatly exceeded the data validation limit of 30% at 112.5%. The dissolved manganese results were qualified as J for the parent and duplicate samples, MKTF-30 and DUP 3/9/2021, as well as the remaining detected dissolved manganese results in the associated samples based on evidence of extremely poor precision (RPD > 100%). The non-detected dissolved manganese results in the associated samples were assigned UJ qualifiers.

VALIDATION CRITERIA CHECKLIST

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? Yes

Comments: A laboratory duplicate was prepared for the analysis of cyanide in batch WG1633983 from sample OAPIS-1 and from a sample not associated with this data set. The RPD for the laboratory duplicate prepared from a project sample was within laboratory acceptance limits

The RPD value for the laboratory duplicate sample prepared from a non-project sample was evaluated and considered, but data were not qualified based on these results since matrix similarity to project samples could not be guaranteed.

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? Yes

Comments: Target analytes were not reported by more than one method in this data set, with the following exceptions.

Target analytes 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1-methylnaphthalene, 2-methylnaphthalene, hexachlorobutadiene, and naphthalene were reported by both Method 8260B and Method 8270C. 1,2-Dibromoethane was reported from analyses by both Method 8260B and 504.1. These analytes were reported as not detected by both methods, or one or both results were within 5 times the applicable reporting limit.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
MKTF-29	Arsenic	ND	0.0010	0.0050 / 0.0010	mg/L	----- ♦
KA-3	Arsenic	ND	0.00094	0.0050 / 0.0010	mg/L	----- ♦
DUP 3/9/2021	Arsenic	ND	0.00050	0.0050 / 0.0010	mg/L	----- ♦
MKTF-24	Boron	0.70	0.72	0.20 / 0.040	mg/L	2.8%
EB 3/9/2021	Boron	ND	0.0069	0.040 / 0.040	mg/L	----- ♦
OAPIS-1	**Copper**	**0.014**	**0.064**	**0.0060 / 0.0060**	**mg/L**	**128.2%**
KA-3	Copper	ND	0.0055	0.0060 / 0.0060	mg/L	----- ♦
OAPIS-1	Thallium	ND	0.000039	0.0012 / 0.00050	mg/L	----- ♦
MKTF-24	Zinc	0.0075	0.015	0.010 / 0.010	mg/L	66.7% ♦
OAPIS-1	**Zinc**	**0.025**	**0.034**	**0.010 / 0.010**	**mg/L**	**30.5%**
MKTF-29	Zinc	ND	0.014	0.010 / 0.010	mg/L	----- ♦
Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
MKTF-30	Zinc	0.0077	0.012	0.010 / 0.010	mg/L	43.6% ♦
KA-3	Zinc	ND	0.020	0.010 / 0.010	mg/L	----- ♦
DUP 3/9/2021	Zinc	0.0076	0.011	0.010 / 0.010	mg/L	36.5% ♦
EB 3/9/2021	Zinc	ND	0.015	0.010 / 0.010	mg/L	----- ♦

----- *RPD could not be calculated.*

♦ *= One or both of the detections were less than 2 times the applicable reporting limits and qualification of data was not required.*

The differences for the corresponding analytical results were within five times the applicable reporting limits and validation

VALIDATION CRITERIA CHECKLIST
action was not required, or the differences between the results were less than 30% indicating that the data were within the measurement uncertainty for the methods and qualification of results was not required based on the analytical inconsistencies, with the following exceptions. **For sample OAPIS-1, the RPD values for copper and zinc were greater than the field duplicate limit of 30% . The discrepancies were evaluated to be significant, and the total and dissolved copper and zinc results for sample OAPIS-1 were assigned J qualifiers.**

FIELD DUPLICATE SUMMARY

Client Sample ID: MKTF-30 Field Duplicate Sample ID: DUP 3/9/2021				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Aluminum, Dissolved	E 200.7	0.025 mg/L	ND (0.020 mg/L)	DL
Aluminum, Total	**E 200.7**	**15 mg/L**	**6.7 mg/L**	**76.5%**
Barium, Dissolved	E 200.7	0.032 mg/L	0.033 mg/L	3.1%
Barium, Total	**E 200.7**	**0.21 mg/L**	**0.11 mg/L**	**62.5%**
Boron, Dissolved	E 200.7	0.72 mg/L	0.75 mg/L	4.1%
Boron, Total	E 200.7	0.75 mg/L	0.79 mg/L	5.2%
Calcium, Dissolved	E 200.7	86 mg/L	87 mg/L	1.2%
Chromium, Total	E 200.7	0.0061 mg/L	0.0026 mg/L	80.5% +/-RL
Cobalt, Dissolved	E 200.7	0.0029 mg/L	ND (0.0060 mg/L)	DL
Cobalt, Total	E 200.7	0.0068 mg/L	0.0034 mg/L	66.7% +/-RL
Copper, Total	E 200.7	0.0070 mg/L	0.0064 mg/L	9.0% +/-RL
Iron, Dissolved	E 200.7	0.012 mg/L	ND (0.020 mg/L)	DL
Iron, Total	**E 200.7**	**5.6 mg/L**	**2.5 mg/L**	**76.5%**
Magnesium, Dissolved	E 200.7	16 mg/L	17 mg/L	6.1%
Manganese, Dissolved	**E 200.7**	**0.005 mg/L**	**0.0014 mg/L**	**112.5%**
Manganese, Total	**E 200.7**	**0.70 mg/L**	**0.51 mg/L**	**31.4%**
Nickel, Dissolved	E 200.7	0.014 mg/L	0.016 mg/L	13.3% +/-RL
Nickel, Total	E 200.7	0.023 mg/L	0.019 mg/L	19.0%
Potassium, Dissolved	E 200.7	0.43 mg/L	0.44 mg/L	2.3% +/-RL
Silver, Dissolved	E 200.7	0.0016 mg/L	ND (0.0050 mg/L)	DL
Silver, Total	E 200.7	0.0016 mg/L	0.0025 mg/L	43.9% +/-RL
Sodium, Dissolved	E 200.7	780 mg/L	800 mg/L	2.5%
Zinc, Dissolved	E 200.7	0.012 mg/L	0.011 mg/L	8.7% +/-RL
Zinc, Total	E 200.7	0.0077 mg/L	0.0076 mg/L	1.3% +/-RL
Arsenic, Dissolved	E200.8	0.00058 mg/L	0.00050 mg/L	14.8% +/-RL
Arsenic, Total	E200.8	0.0013 mg/L	ND (0.0050 mg/L)	DL
Lead, Dissolved	E200.8	0.00010 mg/L	0.000071 mg/L	33.9% +/-RL
Lead, Total	E200.8	0.0048 mg/L	0.0023 mg/L	70.4% +/-RL
Bromide	E300	1.3 mg/L	1.2 mg/L	8.0%
Chloride	E300	570 mg/L	590 mg/L	3.4%
Fluoride, Total	**E300**	**1.0 mg/L**	**0.71 mg/L**	**33.9%**
Nitrogen, Nitrate	E300	0.23 mg/L	ND (0.10 mg/L)	DL
Sulfate	E300	560 mg/L	560 mg/L	0.0%
TPH DRO	SW8015	ND (0.085) mg/L	0.094 mg/L	DL
TPH GRO	SW8015	0.071 mg/L	0.072 mg/L	1.4% +/-RL
1,1,2-Trichloroethane	SW8260B	ND (1.0 µg/L)	0.19 µg/L	DL
1,1-Dichloroethane	SW8260B	29 µg/L	31 µg/L	6.7%
1,1-Dichloroethene	SW8260B	2.5 µg/L	2.1 µg/L	17.4%

Analyte	Method	Laboratory Result	Duplicate Result	Relative Percent Difference (RPD)
1,2-Dichloroethane	SW8260B	1.4 µg/L	1.2 µg/L	15.4% +/-RL
Chloroethane	SW8260B	ND (2.0 µg/L)	0.42 µg/L	DL
cis-1,2-Dichloroethene	SW8260B	2.5 µg/L	2.2 µg/L	12.8%
MTBE	SW8260B	6.0 µg/L	4.6 µg/L	26.4%
Trichloroethene	SW8260B	1.5 µg/L	1.3 µg/L	14.3% +/-RL
Vinyl Chloride	SW8260B	ND (1.0 µg/L)	0.36 µg/L	DL
Bis(2-ethylhexyl)phthalate	SW8270C	9.2 µg/L	7.3 µg/L	23.0% +/-RL
Di-n-butylphthalate	SW8270C	6.8 µg/L	6.8 µg/L	0.0% +/-RL

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD values for multiple analytes exceeded the data validation limit of 30%. These analyte results were assigned J qualifiers for samples MKTF-30 and DUP 3/9/2021 due to evidence of poor precision.

The RPD value for dissolved manganese greatly exceeded the data validation limit of 30% at 112.5%. The dissolved manganese results were qualified as J for the parent and duplicate samples, MKTF-30 and DUP 3/9/2021, as well as the remaining detected dissolved manganese results in the associated samples based on evidence of extremely poor precision (RPD > 100%). The non-detect dissolved manganese results in the associated samples were assigned UJ qualifiers.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
DIS-TOT	Dissolved metals concentration was greater than the associated total metals result
EBD	Equipment blank detection
ERPD-FD	High field duplicate RPD.
ERPD-LCS	The LCS/LCSD RPD exceeded the upper acceptable limit indicating poor precision.
FBD	Field blank detection
HR-LCS	The LCS and/or LCSD percent recovery was greater than the upper acceptable limit indicating a possible high bias.
LR-LCS	The LCS and/or LCSD percent recovery was less than the lower acceptable limit indicating a possible low bias.
MBD	Method blank detection
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,1,2-Trichloroethane	SW8260B	DUP 3/9/2021	2103470-008a	0.19	1.0	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	OAPIS-1	2103470-002A	1.1	2.0	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	MKTF-29	2103470-003a	0.47	1.0	µg/L	J	MDLRL
1,1-Dichloroethene	SW8260B	MKTF-24	2103470-001a	5.7	10	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	MKTF-24	2103470-001a	5.6	10	µg/L	J	MDLRL
1-Methylnaphthalene	SW8260B	MKTF-24	2103470-001a	11	40	µg/L	J	MDLRL
1-Methylnaphthalene	SW8270C	MKTF-24	2103470-001g	6.1	0.10	µg/L	J	ERPD-LCS
1-Methylnaphthalene	SW8270C	KA-3	2103470-005f	0.10	0.10	µg/L	J	ERPD-LCS
1-Methylnaphthalene	SW8270C	NAPIS-3	2103470-006g	1.3	0.10	µg/L	J	ERPD-LCS
1-Methylnaphthalene	SW8270C	OAPIS-1	2103470-002h	ND	5.0	µg/L	UJ	ERPD-LCS
1-Methylnaphthalene	SW8270C	MKTF-29	2103470-003f	ND	0.10	µg/L	UJ	ERPD-LCS
1-Methylnaphthalene	SW8270C	MKTF-30	2103470-004g	ND	0.10	µg/L	UJ	ERPD-LCS
1-Methylnaphthalene	SW8270C	DUP 3/9/2021	2103470-008g	ND	0.10	µg/L	UJ	ERPD-LCS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1-Methylnaphthalene	SW8270C	EB 3/9/2021	2103470-009f	ND	0.10	µg/L	UJ	ERPD-LCS
2-Butanone	SW8260B	FB 3/9/2021	2103470-007a	8.6	10	µg/L	J	MDLRL
2-Methylnaphthalene	SW8270C	MKTF-24	2103470-001g	0.12	0.10	µg/L	J	ERPD-LCS
2-Methylnaphthalene	SW8270C	NAPIS-3	2103470-006g	0.34	0.10	µg/L	J	ERPD-LCS
2-Methylnaphthalene	SW8270C	OAPIS-1	2103470-002h	ND	5.0	µg/L	UJ	ERPD-LCS
2-Methylnaphthalene	SW8270C	MKTF-29	2103470-003f	ND	0.10	µg/L	UJ	ERPD-LCS
2-Methylnaphthalene	SW8270C	MKTF-30	2103470-004g	ND	0.10	µg/L	UJ	ERPD-LCS
2-Methylnaphthalene	SW8270C	KA-3	2103470-005f	ND	0.10	µg/L	UJ	ERPD-LCS
2-Methylnaphthalene	SW8270C	DUP 3/9/2021	2103470-008g	ND	0.10	µg/L	UJ	ERPD-LCS
2-Methylnaphthalene	SW8270C	EB 3/9/2021	2103470-009f	ND	0.10	µg/L	UJ	ERPD-LCS
Acenaphthene	SW8270C	MKTF-24	2103470-001g	0.54	0.10	µg/L	J	ERPD-LCS
Acenaphthene	SW8270C	KA-3	2103470-005f	0.14	0.10	µg/L	J	ERPD-LCS
Acenaphthene	SW8270C	NAPIS-3	2103470-006g	0.36	0.10	µg/L	J	ERPD-LCS
Acenaphthene	SW8270C	OAPIS-1	2103470-002h	ND	5.0	µg/L	UJ	ERPD-LCS
Acenaphthene	SW8270C	MKTF-29	2103470-003f	ND	0.10	µg/L	UJ	ERPD-LCS
Acenaphthene	SW8270C	MKTF-30	2103470-004g	ND	0.10	µg/L	UJ	ERPD-LCS
Acenaphthene	SW8270C	DUP 3/9/2021	2103470-008g	ND	0.10	µg/L	UJ	ERPD-LCS
Acenaphthene	SW8270C	EB 3/9/2021	2103470-009f	ND	0.10	µg/L	UJ	ERPD-LCS
Acenaphthylene	SW8270C	MKTF-24	2103470-001g	ND	0.10	µg/L	UJ	ERPD-LCS
Acenaphthylene	SW8270C	OAPIS-1	2103470-002h	ND	5.0	µg/L	UJ	ERPD-LCS
Acenaphthylene	SW8270C	MKTF-29	2103470-003f	ND	0.10	µg/L	UJ	ERPD-LCS
Acenaphthylene	SW8270C	MKTF-30	2103470-004g	ND	0.10	µg/L	UJ	ERPD-LCS
Acenaphthylene	SW8270C	KA-3	2103470-005f	ND	0.10	µg/L	UJ	ERPD-LCS
Acenaphthylene	SW8270C	NAPIS-3	2103470-006g	ND	0.10	µg/L	UJ	ERPD-LCS
Acenaphthylene	SW8270C	DUP 3/9/2021	2103470-008g	ND	0.10	µg/L	UJ	ERPD-LCS
Acenaphthylene	SW8270C	EB 3/9/2021	2103470-009f	ND	0.10	µg/L	UJ	ERPD-LCS
Acetone	SW8260B	OAPIS-1	2103470-002A	6.6	20	µg/L	U	FBD, MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Acetone	SW8260B	MKTF-29	2103470-003a	2.6	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	EB 3/9/2021	2103470-009a	3.3	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	FB 3/9/2021	2103470-007a	4.7	10	µg/L	J	MDLRL
Aluminum, Total	E 200.7	MKTF-30	2103470-004F	15	0.40	mg/L	J	ERPD-FD
Aluminum, Total	E 200.7	DUP 3/9/2021	2103470-008F	6.7	0.20	mg/L	J	ERPD-FD
Anthracene	SW8270C	NAPIS-3	2103470-006g	0.20	0.10	µg/L	J	ERPD-LCS
Anthracene	SW8270C	MKTF-24	2103470-001g	ND	0.10	µg/L	UJ	ERPD-LCS
Anthracene	SW8270C	OAPIS-1	2103470-002h	ND	5.0	µg/L	UJ	ERPD-LCS
Anthracene	SW8270C	MKTF-29	2103470-003f	ND	0.10	µg/L	UJ	ERPD-LCS
Anthracene	SW8270C	MKTF-30	2103470-004g	ND	0.10	µg/L	UJ	ERPD-LCS
Anthracene	SW8270C	KA-3	2103470-005f	ND	0.10	µg/L	UJ	ERPD-LCS
Anthracene	SW8270C	DUP 3/9/2021	2103470-008g	ND	0.10	µg/L	UJ	ERPD-LCS
Anthracene	SW8270C	EB 3/9/2021	2103470-009f	ND	0.10	µg/L	UJ	ERPD-LCS
Arsenic, Dissolved	E200.8	MKTF-29	2103470-003D	0.0010	0.0010	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-30	2103470-004E	0.00058	0.0010	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	KA-3	2103470-005D	0.00094	0.0010	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	DUP 3/9/2021	2103470-008E	0.00050	0.0010	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-24	2103470-001F	0.0025	0.0050	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-30	2103470-004F	0.0013	0.0050	mg/L	J	MDLRL
Arsenic, Total	E200.8	NAPIS-3	2103470-006F	0.0024	0.0050	mg/L	J	MDLRL
Barium, Total	E 200.7	MKTF-30	2103470-004F	0.21	0.0030	mg/L	J	ERPD-FD
Barium, Total	E 200.7	DUP 3/9/2021	2103470-008F	0.11	0.0030	mg/L	J	ERPD-FD
Beryllium, Dissolved	E 200.7	MKTF-24	2103470-001E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	OAPIS-1	2103470-002E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	MKTF-29	2103470-003D	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	MKTF-30	2103470-004E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	KA-3	2103470-005D	ND	0.0020	mg/L	UJ	LR-LCS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Beryllium, Dissolved	E 200.7	NAPIS-3	2103470-006E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	DUP 3/9/2021	2103470-008E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	EB 3/9/2021	2103470-009D	ND	0.0020	mg/L	UJ	LR-LCS
Bis(2-ethylhexyl)phthalate	SW8270C	OAPIS-1	2103470-002h	14	10	µg/L	JB	MBD
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-24	2103470-001g	6.8	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-29	2103470-003f	7.5	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-30	2103470-004g	9.2	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	KA-3	2103470-005f	7.4	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	NAPIS-3	2103470-006g	7.6	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	DUP 3/9/2021	2103470-008g	7.3	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	EB 3/9/2021	2103470-009f	6.7	10	µg/L	U	MBD, MDLRL
Boron, Dissolved	E 200.7	EB 3/9/2021	2103470-009D	0.0069	0.040	mg/L	J	MDLRL
Carbazole	SW8270C	MKTF-24	2103470-001g	4.1	5.0	µg/L	J	MDLRL
Chloroethane	SW8260B	DUP 3/9/2021	2103470-008a	0.42	2.0	µg/L	J	MDLRL
Chromium, Total	E 200.7	OAPIS-1	2103470-002F	0.0038	0.0060	mg/L	J	MDLRL
Chromium, Total	E 200.7	DUP 3/9/2021	2103470-008F	0.0026	0.0060	mg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	MKTF-24	2103470-001E	0.012	0.0060	mg/L	J+	HR-LCS
Cobalt, Dissolved	E 200.7	OAPIS-1	2103470-002E	0.0099	0.0060	mg/L	J+	HR-LCS
Cobalt, Dissolved	E 200.7	MKTF-29	2103470-003D	0.0056	0.0060	mg/L	J+	HR-LCS, MDLRL
Cobalt, Dissolved	E 200.7	MKTF-30	2103470-004E	0.0029	0.0060	mg/L	J+	HR-LCS, MDLRL
Cobalt, Dissolved	E 200.7	NAPIS-3	2103470-006E	0.0032	0.0060	mg/L	J+	HR-LCS, MDLRL
Cobalt, Total	E 200.7	NAPIS-3	2103470-006F	0.0050	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	DUP 3/9/2021	2103470-008F	0.0034	0.0060	mg/L	J	MDLRL
Copper, Dissolved	E 200.7	KA-3	2103470-005D	0.0055	0.0060	mg/L	J	MDLRL
Copper, Dissolved	E 200.7	OAPIS-1	2103470-002E	0.064	0.0060	mg/L	J	DIS-TOT
Copper, Total	E 200.7	OAPIS-1	2103470-002F	0.014	0.0060	mg/L	J	DIS-TOT
Dibenzofuran	SW8270C	MKTF-24	2103470-001g	2.2	5.0	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Dibenzofuran	SW8270C	KA-3	2103470-005f	2.1	5.0	µg/L	J	MDLRL
Di-n-butylphthalate	SW8270C	OAPIS-1	2103470-002h	7.9	10	µg/L	J	MDLRL
Di-n-butylphthalate	SW8270C	MKTF-29	2103470-003f	7.2	10	µg/L	J	MDLRL
Di-n-butylphthalate	SW8270C	MKTF-30	2103470-004g	6.8	10	µg/L	J	MDLRL
Di-n-butylphthalate	SW8270C	NAPIS-3	2103470-006g	6.6	10	µg/L	J	MDLRL
Di-n-butylphthalate	SW8270C	DUP 3/9/2021	2103470-008g	6.8	10	µg/L	J	MDLRL
Di-n-octylphthalate	SW8270C	EB 3/9/2021	2103470-009f	9.1	10	µg/L	J	MDLRL
Ethylbenzene	SW8260B	KA-3	2103470-005a	2.5	1.0	µg/L	J-	LR-LCS
Ethylbenzene	SW8260B	NAPIS-3	2103470-006a	4.8	1.0	µg/L	J-	LR-LCS
Ethylbenzene	SW8260B	OAPIS-1	2103470-002A	0.82	2.0	µg/L	J	MDLRL
Fluorene	SW8270C	NAPIS-3	2103470-006g	0.28	0.10	µg/L	J	ERPD-LCS
Fluorene	SW8270C	MKTF-24	2103470-001g	ND	0.10	µg/L	UJ	ERPD-LCS
Fluorene	SW8270C	OAPIS-1	2103470-002h	ND	5.0	µg/L	UJ	ERPD-LCS
Fluorene	SW8270C	MKTF-29	2103470-003f	ND	0.10	µg/L	UJ	ERPD-LCS
Fluorene	SW8270C	MKTF-30	2103470-004g	ND	0.10	µg/L	UJ	ERPD-LCS
Fluorene	SW8270C	KA-3	2103470-005f	ND	0.10	µg/L	UJ	ERPD-LCS
Fluorene	SW8270C	DUP 3/9/2021	2103470-008g	ND	0.10	µg/L	UJ	ERPD-LCS
Fluorene	SW8270C	EB 3/9/2021	2103470-009f	ND	0.10	µg/L	UJ	ERPD-LCS
Fluoride, Total	E300	MKTF-30	2103470-004D	1.0	0.50	mg/L	J	ERPD-FD
Fluoride, Total	E300	DUP 3/9/2021	2103470-008D	0.71	0.10	mg/L	J	ERPD-FD
Iron, Dissolved	E 200.7	MKTF-30	2103470-004E	0.012	0.020	mg/L	J	MDLRL
Iron, Total	E 200.7	MKTF-30	2103470-004F	5.6	1.0	mg/L	J	ERPD-FD
Iron, Total	E 200.7	DUP 3/9/2021	2103470-008F	2.5	0.25	mg/L	J	ERPD-FD
Iron, Total	E 200.7	KA-3	2103470-005E	0.044	0.050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-29	2103470-003D	0.000067	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-30	2103470-004E	0.00010	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	KA-3	2103470-005D	0.00030	0.00050	mg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Lead, Dissolved	E200.8	NAPIS-3	2103470-006E	0.000047	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	DUP 3/9/2021	2103470-008E	0.000071	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-29	2103470-003E	0.00027	0.0025	mg/L	J	MDLRL
Lead, Total	E200.8	KA-3	2103470-005E	0.00044	0.0025	mg/L	J	MDLRL
Lead, Total	E200.8	NAPIS-3	2103470-006F	0.00017	0.0025	mg/L	J	MDLRL
Lead, Total	E200.8	DUP 3/9/2021	2103470-008F	0.0023	0.0025	mg/L	J	MDLRL
Manganese, Dissolved	E 200.7	MKTF-24	2103470-001E	3.4	0.010	mg/L	J	ERPD-FD
Manganese, Dissolved	E 200.7	OAPIS-1	2103470-002E	0.98	0.0020	mg/L	J	ERPD-FD
Manganese, Dissolved	E 200.7	MKTF-29	2103470-003D	4.6	0.010	mg/L	J	ERPD-FD
Manganese, Dissolved	E 200.7	MKTF-30	2103470-004E	0.0050	0.0020	mg/L	J	ERPD-FD
Manganese, Dissolved	E 200.7	KA-3	2103470-005D	0.31	0.0020	mg/L	J	ERPD-FD
Manganese, Dissolved	E 200.7	NAPIS-3	2103470-006E	1.6	0.010	mg/L	J	ERPD-FD
Manganese, Dissolved	E 200.7	EB 3/9/2021	2103470-009D	ND	0.0020	mg/L	UJ	ERPD-FD
Manganese, Dissolved	E 200.7	DUP 3/9/2021	2103470-008E	0.0014	0.0020	mg/L	J	ERPD-FD, MDLRL
Manganese, Total	E 200.7	MKTF-30	2103470-004F	0.70	0.0020	mg/L	J	ERPD-FD
Manganese, Total	E 200.7	DUP 3/9/2021	2103470-008F	0.51	0.0020	mg/L	J	ERPD-FD
MTBE	SW8260B	KA-3	2103470-005a	52	1.0	µg/L	J-	LR-LCS
MTBE	SW8260B	NAPIS-3	2103470-006a	51	1.0	µg/L	J-	LR-LCS
Naphthalene	SW8270C	MKTF-24	2103470-001g	1.4	0.10	µg/L	J	ERPD-LCS
Naphthalene	SW8270C	KA-3	2103470-005f	0.12	0.10	µg/L	J	ERPD-LCS
Naphthalene	SW8270C	NAPIS-3	2103470-006g	0.6	0.10	µg/L	J	ERPD-LCS
Naphthalene	SW8270C	OAPIS-1	2103470-002h	ND	5.0	µg/L	UJ	ERPD-LCS
Naphthalene	SW8270C	MKTF-29	2103470-003f	ND	0.10	µg/L	UJ	ERPD-LCS
Naphthalene	SW8270C	MKTF-30	2103470-004g	ND	0.10	µg/L	UJ	ERPD-LCS
Naphthalene	SW8270C	DUP 3/9/2021	2103470-008g	ND	0.10	µg/L	UJ	ERPD-LCS
Naphthalene	SW8270C	EB 3/9/2021	2103470-009f	ND	0.10	µg/L	UJ	ERPD-LCS
n-Butylbenzene	SW8260B	MKTF-24	2103470-001a	5.9	30	ug/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Nitrogen, Nitrate	E300	OAPIS-1	2103470-002D	0.33	0.50	mg/L	J	MDLRL
Nitrogen, Nitrate	E300	MKTF-30	2103470-004D	0.23	0.50	mg/L	J	MDLRL
Phenanthrene	SW8270C	MKTF-24	2103470-001g	ND	0.10	µg/L	UJ	ERPD-LCS
Phenanthrene	SW8270C	OAPIS-1	2103470-002h	ND	5.0	µg/L	UJ	ERPD-LCS
Phenanthrene	SW8270C	MKTF-29	2103470-003f	ND	0.10	µg/L	UJ	ERPD-LCS
Phenanthrene	SW8270C	MKTF-30	2103470-004g	ND	0.10	µg/L	UJ	ERPD-LCS
Phenanthrene	SW8270C	KA-3	2103470-005f	ND	0.10	µg/L	UJ	ERPD-LCS
Phenanthrene	SW8270C	NAPIS-3	2103470-006g	ND	0.10	µg/L	UJ	ERPD-LCS
Phenanthrene	SW8270C	DUP 3/9/2021	2103470-008g	ND	0.10	µg/L	UJ	ERPD-LCS
Phenanthrene	SW8270C	EB 3/9/2021	2103470-009f	ND	0.10	µg/L	UJ	ERPD-LCS
Phenol	SW8270C	NAPIS-3	2103470-006g	4.4	5.0	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	MKTF-24	2103470-001a	2.6	10	µg/L	J	MDLRL
Potassium, Dissolved	E 200.7	MKTF-29	2103470-003D	0.57	1.0	mg/L	J	MDLRL
Potassium, Dissolved	E 200.7	MKTF-30	2103470-004E	0.43	1.0	mg/L	J	MDLRL
Potassium, Dissolved	E 200.7	NAPIS-3	2103470-006E	0.37	1.0	mg/L	J	MDLRL
Potassium, Dissolved	E 200.7	DUP 3/9/2021	2103470-008E	0.44	1.0	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-24	2103470-001E	0.0035	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	OAPIS-1	2103470-002E	0.0021	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-30	2103470-004E	0.0016	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	NAPIS-3	2103470-006E	0.0019	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-24	2103470-001F	0.0042	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	OAPIS-1	2103470-002F	0.0031	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-30	2103470-004F	0.0016	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	NAPIS-3	2103470-006F	0.0034	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	DUP 3/9/2021	2103470-008F	0.0025	0.0050	mg/L	J	MDLRL
Sodium, Dissolved	E 200.7	EB 3/9/2021	2103470-009D	0.33	1.0	mg/L	J	MDLRL
Thallium, Dissolved	E200.8	OAPIS-1	2103470-002E	0.000039	0.00050	mg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
TPH GRO	SW8015	OAPIS-1	2103470-002A	0.13	0.10	mg/L	JB	MBD
TPH GRO	SW8015	MKTF-30	2103470-004a	0.071	0.050	mg/L	JB	MBD
TPH GRO	SW8015	KA-3	2103470-005a	0.11	0.050	mg/L	JB	MBD
TPH GRO	SW8015	DUP 3/9/2021	2103470-008a	0.072	0.050	mg/L	JB	MBD
TPH GRO	SW8015	MKTF-29	2103470-003a	0.024	0.050	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	EB 3/9/2021	2103470-009a	0.02	0.050	mg/L	U	MBD, MDLRL
Vinyl Chloride	SW8260B	DUP 3/9/2021	2103470-008a	0.36	1.0	µg/L	J	MDLRL
Xylenes, Total	SW8260B	KA-3	2103470-005a	ND	1.5	µg/L	R	LR-LCS
Xylenes, Total	SW8260B	NAPIS-3	2103470-006a	ND	1.5	µg/L	R	LR-LCS
Zinc, Dissolved	E 200.7	KA-3	2103470-005D	0.020	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	MKTF-24	2103470-001E	0.015	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	MKTF-29	2103470-003D	0.014	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	MKTF-30	2103470-004E	0.012	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	DUP 3/9/2021	2103470-008E	0.011	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	OAPIS-1	2103470-002E	0.034	0.010	mg/L	JB	DIS-TOT, EBD
Zinc, Total	E 200.7	MKTF-24	2103470-001F	0.0075	0.010	mg/L	J	MDLRL
Zinc, Total	E 200.7	MKTF-30	2103470-004F	0.0077	0.010	mg/L	J	MDLRL
Zinc, Total	E 200.7	DUP 3/9/2021	2103470-008F	0.0076	0.010	mg/L	J	MDLRL
Zinc, Total	E 200.7	OAPIS-1	2103470-002F	0.025	0.010	mg/L	J	DIS-TOT

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-001 Task: 0016	Sample Start Date: 03/09/2021
Date Validated: 02/07/2022	Sample End Date: 03/10/2021

Parameters Included:

- Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B
- 1,2-Dibromoethane (EDB) by EPA Method 504.1
- Semivolatile Organic Compounds (SVOC) by SW-846 Method 8270C and Method 8270C with Selective Ion Monitoring (SIM)
- Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D
- TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified
- Total and Dissolved Metals by EPA Methods 200.7 and 200.8
- Total and Dissolved Mercury by EPA Method 245.1
- Anions by EPA Method 300.0
- Chemical Oxygen Demand (COD) by EPA Method 410.4
- Total Dissolved Solids (TDS) by Standard Methods for the Examination of Water and Wastewater (SM) Method 2540C
- Suspended Solids (SS) by SM Method 2540D
- Biochemical Oxygen Demand (BOD) by SM Method 5210B

Laboratory Project ID: 2103532

Data Validator: Daran O'Hollearn, Lead Project Scientist

Reviewer: Mike Phillips, Senior Chemist

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, with additional data from Pace Analytical National of Mount Juliet, Tennessee evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Laboratory duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples

Tier II Data Validation Report Summary

- Organic system monitoring compounds (surrogates)

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Equipment blanks
- Trip blanks

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
NAPIS-2	2103532-001
STP-1-NW	2103532-002
MKTF-50	2103532-003
MKTF-49	2103532-004
MKTF-10	2103532-005
MKTF-11	2103532-006
MKTF-02	2103532-007
OW-56	2103532-008
West LDU	2103532-009
East LDU	2103532-010
EB 3-10-21	2103532-011
STP-EP	2103532-012
DUP 3-10-21	2103532-013
Trip Blank	2103532-014

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ○ Initial and Continuing Calibrations (Items 9 and 10)
- ⊗ Laboratory Blanks (Items 11 and 12)
- ✓ MS/MSD (Items 13 and 14)
- ⊗ LCS/LCSD (Items 15 and 16)
- ⊗ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Equipment and Trip Blanks (Items 18 and 19)
- ⊗ Field Duplicates (Items 20 and 21)
- ✓ Laboratory Duplicates (Item 22)
- ✓ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
J+	The result is an estimated concentration, but may be biased high
J-	The result is an estimated concentration, but may be biased low
UJ	Estimated reporting limit
U	Evaluated to be undetected at the reporting limit
JB	Estimated concentration due to blank contamination
R	Rejected, data not usable

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 1,783 data points. The data completeness calculation does not include any submitted blank sample results. Eleven data points were rejected. The data completeness measure for this data package is calculated to be 99.38% and is acceptable.

VALIDATION CRITERIA CHECKLIST

1. Was the report free of non-conformances identified by the laboratory? No

Comments: The laboratory noted the following analytical non-conformances related to this data set.

Method 8015D DRO: The samples listed below had a single contaminant peak that was identified in the QC and the samples listed below. The contaminant peak was manually removed from the summation of the diesel range organics results. The concentration of the contaminant peak, in the samples that was removed, is listed next to the sample name: NAPIS-2 (0.15mg/L), STP-1 NW (0.16mg/L), MKTF-50 0.1mg/L), MKTF- 11 (0.22mg/L), MKTF-02 (0.6mg/L), West LDU (0.1mg/L), STP-EP (0.98mg/L), Dup 3-10-21 (0.01mg/L), LCS 58742 (0.07mg/L), LCSD 58742 (0.02mg/L), LCS 58760 (0.04mg/L), LCSD 58760 (0.01mg/L). We are researching the source of the contamination to prevent this peak from appearing in the future.

Method 504.1: Sample EB 3-10-21 was preserved with HCL.

2. Were the data free of data qualification flags and/or notes used by the laboratory? If no, define. No

Comments: The laboratory used the following data qualification flags with this data set.

D – Sample Diluted Due to Matrix.

J – Analyte detected below quantitation limits.

S – % Recovery outside of range due to dilution or matrix.

* – Value exceeds Maximum Contaminant Level.

3. Were sample CoC forms and custody procedures complete? Yes

Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.

4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable? Yes

Comments: The detection limits appeared to be acceptable. The following dilutions were applied.

Method	Sample(s)	Analyte(s)	Dilution Factor
8015D	West LDU	GRO	2
8260B	West LDU	VOC	2
200.7	Multiple Samples	Select Dissolved and Total Metals	5
200.8	Multiple Samples	Select Dissolved and Total Metals	5
300.0	Multiple Samples	Select Anions	5
8015D	Multiple Samples	GRO	5
8260B	Multiple Samples	VOC	5
200.7	Multiple Samples	Select Dissolved and Total Metals	10
8015D	Multiple Samples	GRO	10
8260B	Multiple Samples	Select VOC	10
8270C	Multiple Samples	Select SVOC	10
200.7	Multiple Samples	Select Dissolved and Total Metals	20
300.0	Multiple Samples	Select Anions	20
8015D	MKTF-49	GRO	20
8260B	MKTF-49	VOC	20
200.7	East LDU	Dissolved and Total Iron	50
8260B	MKTF-02	Benzene	50

VALIDATION CRITERIA CHECKLIST

Method	Sample(s)	Analyte(s)	Dilution Factor
8270C	MKTF-50	SVOC	50
300.0	MKTF-50. MKTF-10	Chloride	100
8260B	Multiple Samples	Select VOCs	100
300.0	Multiple Samples	Chloride	200
8260B	MKTF-49	Benzene, Toluene, Total Xylenes	200
300.0	MKTF-02	Chloride	500

5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC? Yes

Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.

6. Were samples received in good condition within method-specified requirements? No

Comments: Samples were received on ice, in good condition, and with the cooler temperatures both within and outside the recommended temperature range of 4°C ± 2°C between 2.2°C and 6.5°C as noted on the CoC and Sample Log-in Check List. Samples transferred to Pace National of Mt. Juliet, Tennessee were received in good condition with the cooler temperature outside the recommended range at 1.8°C as noted on the CoC.

The cooler temperature above 6°C was evaluated to be acceptable since the samples were received at the laboratory on the same day (within 24 hours) of the last sample collection time, and temperature equilibrium had not been established.

The cooler temperature below 2.0°C was judged as acceptable since the laboratory did not report the sample containers as broken or frozen.

7. Were samples extracted/digested and analyzed within method-specified or technical holding times? Yes

Comments: The samples were extracted/digested and analyzed within method-specific holding times.

8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil. Yes

Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.

9. Did the laboratory provide any specific initial and/or continuing calibration results? No

Comments: Initial and continuing calibration data were not included as part of this data set.

10. If initial and/or continuing calibration results were provided, were the results within acceptable limits? N/A

Comments: Initial and continuing calibration data were not included as part of this data set.

11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.

VALIDATION CRITERIA CHECKLIST

12. Were target analytes reported as not detected in the laboratory blanks? No

Comments: Target analytes were reported as not detected in the laboratory blanks, with the following exceptions.

Method	Analyte	Batch	Concentration
200.8	**Total Antimony**	**58685**	**0.00012 mg/L**
200.8	**Total Arsenic**	**58685**	**0.000012 mg/L**
200.8	**Total Lead**	**58685**	**0.000016 mg/L**
8260B	Methylene Chloride	A76055	0.41 µg/L
8270C	**Bis(2-ethylhexyl)phthalate**	**58720**	**8.4 µg/L**
8270C	**DI-n-butyl phthalate**	**58720**	**7.7 µg/L**
8270C	**Di-n-octyl phthalate**	**58720**	**9.2 µg/L**
8015D	**GRO**	**B76015**	**0.017 mg/L**
8015D	**GRO**	**B76055**	**0.017 mg/L**

Detections of the identified analytes in the associated samples that were less than the blank results and/or less than or equal to the applicable reporting limits were assigned U qualifiers. Detections of the identified analytes in the associated samples that were greater than the reporting limits but less than or equal to 10 times the blank results were assigned JB qualifiers. Non-detections of the identified analytes in the associated samples and detections that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batches. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
200.7	Total Metals	58685	STP-1-NW, MKTF-50
200.7	Total Metals	A75962	Not Prepared
200.7	Dissolved Metals	A75995	Not Prepared
200.7	Dissolved Metals	A76034	Not Prepared
200.7	Dissolved Zinc	A76065	Not Prepared
200.7	Dissolved Metals	B75995	EB 3-10-21
200.8	Total Metals	58685	NAPIS-2
200.8	Dissolved Metals	A75953	DUP 3-10-21
200.8	Total Metals	C75953	Not Prepared
245.1	Total Mercury	58746	EB 3-10-21
245.1	Dissolved Mercury	58800	NAPIS-2
245.1	Dissolved Mercury	58801	Not Prepared
300.0	Anions	A75861	EB 3-10-21
300.0	Anions	R75889	Not Prepared
300.0	Chloride	R75905	Not Prepared
410.4	COD	R76599 / WG1636311	Not Associated
504.1	EDB	58711	Not Prepared
2540C	TDS	58752	Not Prepared
2540D	TSS	58670	Not Prepared

VALIDATION CRITERIA CHECKLIST

Method	Analytes	Batch	MS Sample Source
5210B	BOD	58661	Not Prepared
8015D	TPH DRO and MRO	58742	Not Prepared
8015D	TPH DRO and MRO	58760	Not Prepared
8015D	GRO	B76015	Not Prepared
8015D	GRO	B76055	Not Prepared
8260B	VOC	A76015	Not Prepared
8260B	VOC	A76055	Not Prepared
8260B	VOC	C76015	Not Prepared
8260B	VOC	C76055	Not Prepared
8260B	Benzene	R76128	Not Prepared
8270 SIM	SVOC	58709	Not Prepared
8270C	SVOC	58720	Not Prepared

Not Associated – The MS sample source was not associated with this project
Not Prepared – Matrix spikes were not prepared/reported for this batch.

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? Yes

Comments: The percent recoveries and RPDs for MS/MSDs prepared from project samples were within data validation and laboratory QC limits or were not applicable because the unspiked amount was more than four times the spike added, with the following exception.

The MS and MSD percent recoveries for bromide in Method 300.0 batch A75861 were outside the laboratory QC limits of 85.9-106% at 107% and 107%, respectively. Although the MS and MSD recoveries for bromide were greater than the laboratory QC limits of 85.9-106%, these recoveries were within the National Functional Guidelines data validation QC limits of 80-120%. Therefore, qualification of the bromide results was not required.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? No

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits, with the following exceptions.

Method	Analyte	Batch	LCS Recovery	LCS/LCSD QC Limits
200.7	**Total Copper**	**A75962**	**63.4%**	**70-130%**
200.7	Total Nickel	A75962	158%	70-130%
200.7	**Dissolved Beryllium**	**A75955**	**66.7%**	**70-130%**
200.7	**Dissolved Cobalt**	**A75955**	**131%**	**70-130%**
200.7	**Dissolved Beryllium**	**B75995**	**65.1%**	**70-130%**
5210B	**BOD**	**58661**	**83.8%**	**84.6-115.4%**

Detections of dissolved cobalt in the associated samples were qualified as J+ due to evidence of potential high bias. Non-detection of dissolved cobalt and total nickel in the associated samples did not require qualification.

Analytes with LCS percent recoveries that were less than the lower laboratory QC limits were qualified as J- if detected and UJ if not detected in the associated samples due to evidence of potential low bias.

VALIDATION CRITERIA CHECKLIST

17. Were surrogate recoveries within laboratory QC limits? No

Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions.

The Method 8270C surrogates 2-fluorophenol and 2,4,6-tribromophenol for sample MKTF-49 recovered below the acceptance limits of 15-88.8% and 15-97.4% at 0.0% and 2.81%, respectively. The target analytes associated with these surrogates that were detected in sample MKTF-49 were assigned J- qualifiers due to evidence of potential low bias. The associated target analyte results not detected in sample MKTF-49 were qualified as R indicating rejected results, data not usable.

Since Method 8270C surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes in a given fraction (acid or base/neutral) when two or more surrogates from the same fraction (acid or base/neutral) were outside the acceptance range. This condition did not exist for the samples MKTF-50, MKTF-10, and DUP 3-10-21, and qualification of sample data was not required.

The SVOC results for sample MKTF-50, MKTF-49, MKTF-10, MKTF-11, MKTF-02, and DUP 3-10-21 were not qualified based on the surrogate non-conformances in the Method 8270 SIM analyses since the applied dilutions of 50, 10, 10, 10, 10, and 10 times resulted in surrogate concentrations below routinely calibrated levels, and those results were deemed unreliable and possibly inaccurate.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One trip blank sample, Trip Blank, and one equipment blank sample, EB 3-10-2021, were collected as part of this sample set.

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
EB 3-10-21	**200.7**	**Dissolved Zinc**	**0.019 mg/L**
EB 3-10-21	8015D	GRO	0.016 mg/L

Detections of dissolved zinc in the associated samples that were less than the blank results and/or less than the applicable reporting limits were assigned U qualifiers. Detections of the identified analytes in the associated samples that were greater than the reporting limits but less than 10 times the blank results were assigned JB qualifiers. Detections of dissolved zinc in the associated samples that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

The GRO results for the samples in batch B76015 were previously qualified due to laboratory blank contamination; therefore, additional qualification due to the equipment blank contamination was not required.

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? No

Comments: The number of field duplicates collected was not equal to at least 10% of the number of samples. Sample DUP 3-10-21 was collected as a field duplicate of sample MKTF-11.

VALIDATION CRITERIA CHECKLIST

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? No

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples, with the following exceptions.

The RPD values for 1-methylnaphthalene, 2-methylnaphthalene, and 3,4-methylphenol exceeded the data validation limit of 30% at 31.6%. 34.8%, and 30.8%, respectively, which was evidence of poor precision. These analyte results were qualified as J for samples MKTF-11 and DUP 3-10-21.

The RPD value for total xylenes greatly exceeded the data validation limit of 30% at 103.3%. The total xylenes results were qualified as J for the parent and duplicate samples, MKTF-11 and DUP 3-10-21, as well as the remaining detected total xylenes results in the associated samples based on evidence of extremely poor precision (RPD > 100%). The non-detected total xylene results in the associated samples were assigned UJ qualifiers.

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? N/A

Comments: Laboratory duplicate pairs were prepared for the analysis of COD in batch R76599 / WG1636311 from samples not associated with this data set.

The RPD values for the laboratory duplicate samples prepared from non-project samples were evaluated and considered, but data were not qualified based on these results since matrix similarity to project samples could not be guaranteed.

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? Yes

Comments: Target analytes were not reported by more than one method in this data set, with the following exceptions.

Target analytes 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1-methylnaphthalene, 2-methylnaphthalene, hexachlorobutadiene, and naphthalene were reported by both Method 8260B and Method 8270C. 1,2-Dibromoethane was reported from analyses by both Method 8260B and 504.1. These analytes were reported as not detected by both methods, or one or both results were within 5 times the applicable reporting limit, with the following exception.

The naphthalene results for sample MKTF-10 were detected by Method 8260B and Method 8270C at more than 5 times the applicable reporting limits. The difference was within the variability of the analytical methods, and the results did not require qualification.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
STP-EP	Antimony	0.0011	0.0013	0.0010 / 0.0010	mg/L	16.7% ♦
MKTF-50	Arsenic	0.0017	0.0014	0.0050 / 0.0010	mg/L	19.4%♦
MKTF-02	Arsenic	ND	0.0011	0.0050 / 0.0050	mg/L	----- ♦
MKTF-50	Barium	3.3	3.7	0.010 / 0.015	mg/L	11.4%
MKTF-49	Barium	8.9	9.2	0.040 / 0.060	mg/L	3.3%
MKTF-10	Barium	9.7	10	0.040 / 0.060	mg/L	3.0%
MKTF-02	Barium	0.43	0.44	0.0020 / 0.0030	mg/L	2.3%

VALIDATION CRITERIA CHECKLIST

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
NAPIS-2	Boron	0.42	0.41	0.040 / 0.040	mg/L	2.4%
MKTF-02	Boron	0.77	0.75	0.040 / 0.040	mg/L	2.6%
OW-56	Boron	0.63	0.61	0.040 / 0.040	mg/L	3.2%
West LDU	Boron	0.016	0.014	0.040 / 0.040	mg/L	13.3%
East LDU	Boron	0.041	0.029	0.040 / 0.040	mg/L	34.2% ♦
STP-EP	Boron	0.23	0.21	0.040 / 0.040	mg/L	9.1%
DUP 3-10-21	Boron	0.60	0.59	0.040 / 0.040	mg/L	1.7%
West LDU	Cobalt	0.0061	0.0081	0.0060 / 0.0060	mg/L	28.1% ♦
East LDU	Cobalt	0.031	0.030	0.0060 / 0.0060	mg/L	3.3%
East LDU	Iron	21	20	1.0 / 2.5	mg/L	4.9%
MKTF-02	Manganese	6.8	6.7	0.040 / 0.020	mg/L	1.5%
MKTF-11	Molybdenum	0.034	0.033	0.0080 / 0.0080	mg/L	2.9%
OW-56	Molybdenum	ND	0.0069	0.0080 / 0.0080	mg/L	----- ♦
MKTF-50	Nickel	0.011	0.0083	0.010 / 0.010	mg/L	28.0% ♦
MKTF-49	Nickel	0.0053	0.0047	0.010 / 0.010	mg/L	12.1% ♦
MKTF-10	Nickel	0.017	0.014	0.010 / 0.010	mg/L	19.4% ♦
MKTF-11	Nickel	0.030	0.026	0.010 / 0.010	mg/L	14.3%
MKTF-02	Nickel	0.015	0.013	0.010 / 0.010	mg/L	14.3% ♦
OW-56	Nickel	0.086	0.078	0.010 / 0.010	mg/L	9.8%
STP-EP	Nickel	0.0076	0.0056	0.010 / 0.010	mg/L	30.3% ♦
DUP 3-10-21	Nickel	0.033	0.028	0.010 / 0.010	mg/L	16.4%
NAPIS-2	Zinc	ND	0.015	0.010 / 0.010	mg/L	----- ♦
DUP 3-10-21	Zinc	0.013	0.026	0.010 / 0.010	mg/L	66.7% ♦
MKTF-50	Zinc	ND	0.0062	0.010 / 0.010	mg/L	----- ♦
MKTF-49	Zinc	ND	0.016	0.010 / 0.010	mg/L	----- ♦
EB 3-10-21	Zinc	ND	0.019	0.010 / 0.010	mg/L	----- ♦
MKTF-10	Zinc	ND	0.013	0.010 / 0.010	mg/L	----- ♦
MKTF-02	Zinc	ND	0.014	0.010 / 0.010	mg/L	----- ♦
MKTF-11	Zinc	0.015	0.021	0.010 / 0.010	mg/L	33.3%♦
OW-56	Zinc	ND	0.016	0.010 / 0.010	mg/L	----- ♦

----- *RPD could not be calculated.*

♦ *= One or both of the detections were less than 2 times the applicable reporting limits, and qualification of data was not required.*

The differences for the corresponding analytical results were within five times the applicable reporting limits and validation action was not required, or the RPDs between the results were less than 30% indicating that the data were within the measurement uncertainty for the methods, and qualification of results was not required based on the analytical inconsistencies.

FIELD DUPLICATE SUMMARY

Client Sample ID: MKTF-11 Field Duplicate Sample ID: DUP 3-10-21				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Aluminum, Dissolved	E 200.7	0.0062 mg/L	ND (0.020 mg/L)	DL
Aluminum, Total	E 200.7	1.3 mg/L	1.4 mg/L	7.4%
Barium, Dissolved	E 200.7	3.0 mg/L	3.1 mg/L	3.3%
Barium, Total	E 200.7	3.3 mg/L	3.4 mg/L	3.0%
Boron, Dissolved	E 200.7	0.59 mg/L	0.6 mg/L	1.7%
Boron, Total	E 200.7	0.59 mg/L	0.59 mg/L	0.0%
Calcium, Dissolved	E 200.7	300 mg/L	310 mg/L	3.3%
Cobalt, Dissolved	E 200.7	0.011 mg/L	0.010 mg/L	9.5% +/-RL
Cobalt, Total	E 200.7	0.013 mg/L	0.013 mg/L	0.0%
Iron, Dissolved	E 200.7	6.3 mg/L	5.9 mg/L	6.6%
Iron, Total	E 200.7	9.8 mg/L	9.7 mg/L	1.0%
Magnesium, Dissolved	E 200.7	79 mg/L	82 mg/L	3.7%
Manganese, Dissolved	E 200.7	5.6 mg/L	5.4 mg/L	3.6%
Manganese, Total	E 200.7	6.0 mg/L	6.0 mg/L	0.0%
Molybdenum, Dissolved	E 200.7	0.034 mg/L	0.036 mg/L	5.7%
Molybdenum, Total	E 200.7	0.033 mg/L	0.037 mg/L	11.4%
Nickel, Dissolved	E 200.7	0.030 mg/L	0.033 mg/L	9.5%
Nickel, Total	E 200.7	0.026 mg/L	0.028 mg/L	7.4%
Potassium, Dissolved	E 200.7	1.8 mg/L	1.7 mg/L	5.7% +/-RL
Silver, Dissolved	E 200.7	0.0043 mg/L	0.0039 mg/L	9.8% +/-RL
Silver, Total	E 200.7	0.0047 mg/L	0.0051 mg/L	8.2% +/-RL
Sodium, Dissolved	E 200.7	1100 mg/L	1000 mg/L	9.5%
Zinc, Dissolved	E 200.7	0.021 mg/L	0.026 mg/L	21.3%
Zinc, Total	E 200.7	0.015 mg/L	0.013 mg/L	14.3% +/-RL
Arsenic, Dissolved	E200.8	0.0087 mg/L	0.0092 mg/L	5.6% +/-RL
Arsenic, Total	E200.8	0.016 mg/L	0.014 mg/L	13.3%
Lead, Total	E200.8	0.00085 mg/L	0.00083 mg/L	2.4% +/-RL
Bromide	E300	1.0 mg/L	0.90 mg/L	10.5% +/-RL
Chloride	E300	1,700 mg/L	1,800 mg/L	5.7%
Fluoride, Total	E300	0.76 mg/L	0.84 mg/L	10.0% +/-RL
Nitrogen, Nitrate	E300	ND (0.50 mg/L)	0.26 mg/L	DL
Sulfate	E300	42 mg/L	43 mg/L	2.4%
TPH DRO	SW8015	0.62 mg/L	0.53 mg/L	15.7%
TPH GRO	SW8015	14 mg/L	15 mg/L	6.9%
1,1-Dichloroethane	SW8260B	21 µg/L	21 µg/L	0.0%
1,1-Dichloroethene	SW8260B	1.3 µg/L	1.3 µg/L	0.0% +/-RL
1,2,4-Trimethylbenzene	SW8260B	110 µg/L	100 µg/L	9.5%
1,2-Dichloroethane	SW8260B	2.0 µg/L	1.9 µg/L	5.1% +/-RL

Analyte	Method	Laboratory Result	Duplicate Result	Relative Percent Difference (RPD)
1,3,5-Trimethylbenzene	SW8260B	23 µg/L	23 µg/L	0.0%
1-Methylnaphthalene	SW8260B	5.0 µg/L	ND (20 µg/L)	DL
2-Methylnaphthalene	SW8260B	5.9 µg/L	3.9 µg/L	40.8% +/-RL
Benzene	SW8260B	4,900 µg/L	4,600 µg/L	6.3%
Chloroethane	SW8260B	23 µg/L	23 µg/L	0.0%
Ethylbenzene	SW8260B	210 µg/L	220 µg/L	4.7%
Isopropylbenzene	SW8260B	7.4 µg/L	7.5 µg/L	1.3% +/-RL
MTBE	SW8260B	52 µg/L	49 µg/L	5.9%
Naphthalene	SW8260B	19 µg/L	17 µg/L	11.1% +/-RL
n-Butylbenzene	SW8260B	2.6 µg/L	3.2 µg/L	20.7% +/-RL
n-Propylbenzene	SW8260B	10 µg/L	10 µg/L	0.0% +/-RL
sec-Butylbenzene	SW8260B	3.4 µg/L	3.6 µg/L	5.7% +/-RL
Toluene	SW8260B	250 µg/L	260 µg/L	3.9%
Vinyl Chloride	SW8260B	29 µg/L	29 µg/L	0.0%
Xylenes, Total	**SW8260B**	**690 µg/L**	**220 µg/L**	**103.3%**
1-Methylnaphthalene	**SW8270C**	**3.2 µg/L**	**4.4 µg/L**	**31.6%**
2,4-Dimethylphenol	SW8270C	8.8 µg/L	10 µg/L	12.8% +/-RL
2-Methylnaphthalene	**SW8270C**	**3.8 µg/L**	**5.4 µg/L**	**34.8%**
2-Methylphenol	SW8270C	17 µg/L	23 µg/L	30.0%
3,4-Methylphenol	**SW8270C**	**11 µg/L**	**15 µg/L**	**30.8%**
Bis(2-ethylhexyl)phthalate	SW8270C	6.4 µg/L	6.5 µg/L	1.6% +/-RL
Carbazole	SW8270C	4.4 µg/L	4.4 µg/L	0.0% +/-RL
Dibenzofuran	SW8270C	2.3 µg/L	2.3 µg/L	0.0% +/-RL
Di-n-octylphthalate	SW8270C	9.4 µg/L	9.3 µg/L	1.1% +/-RL
Fluorene	SW8270C	1.4 µg/L	1.4 µg/L	0.0% +/-RL
Naphthalene	SW8270C	12 µg/L	16 µg/L	28.6%
Phenol	SW8270C	86 µg/L	110 µg/L	24.5%

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD values for 1-methylnaphthalene, 2-methylnaphthalene, and 3,4-methylphenol exceeded the data validation limit of 30% at 31.6%, 34.8%, and 30.8%, respectively, which was evidence of poor precision. These analyte results were qualified as J for samples MKTF-11 and DUP 3-10-21.

The RPD value for total xylenes greatly exceeded the data validation limit of 30% at 103.3%. The total xylenes results were qualified as J for the parent and duplicate samples, MKTF-11 and DUP 3-10-21, as well as the remaining detected total xylenes results in the associated samples based on evidence of extremely poor precision (RPD > 100%). The non-detected total xylene results in the associated samples were assigned UJ qualifiers.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
EBD	Equipment blank detection
ERPD-FD	High field duplicate RPD.
HR-LCS	The LCS and/or LCSD percent recovery was greater than the upper acceptable limit indicating a possible high bias.
LR-LCS	The LCS and/or LCSD percent recovery was less than the lower acceptable limit indicating a possible low bias.
LR-SUR	The surrogate percent recovery was less than the lower acceptable limit indicating a possible low bias.
MBD	Method blank detection
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,1,2-Trichloroethane	SW8260B	MKTF-02	2103532-007a	0.97	5.0	µg/L	J	MDLRL
1,1-Dichloroethene	SW8260B	MKTF-10	2103532-005a	2.4	5.0	µg/L	J	MDLRL
1,1-Dichloroethene	SW8260B	MKTF-11	2103532-006a	1.3	5.0	µg/L	J	MDLRL
1,1-Dichloroethene	SW8260B	MKTF-02	2103532-007a	2.2	5.0	µg/L	J	MDLRL
1,1-Dichloroethene	SW8260B	DUP 3-10-21	2103532-013a	1.3	5.0	µg/L	J	MDLRL
1,2-Dibromoethane	E504.1	MKTF-02	2103532-007B	0.0073	0.0092	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	MKTF-11	2103532-006a	2.0	5.0	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	MKTF-02	2103532-007a	3.0	5.0	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	DUP 3-10-21	2103532-013a	1.9	5.0	µg/L	J	MDLRL
1,3,5-Trimethylbenzene	SW8260B	MKTF-02	2103532-007a	2.3	5.0	µg/L	J	MDLRL
1-Methylnaphthalene	SW8270C	MKTF-11	2103532-006c	3.2	1.0	µg/L	J	ERPD-FD
1-Methylnaphthalene	SW8270C	DUP 3-10-21	2103532-013c	4.4	1.0	µg/L	J	ERPD-FD
1-Methylnaphthalene	SW8260B	MKTF-11	2103532-006a	5.0	20	µg/L	J	MDLRL
2,4,5-Trichlorophenol	SW8270C	MKTF-49	2103532-004c	ND	5.0	µg/L	R	LR-SUR
2,4,6-Trichlorophenol	SW8270C	MKTF-49	2103532-004c	ND	5.0	µg/L	R	LR-SUR

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
2,4-Dichlorophenol	SW8270C	MKTF-49	2103532-004c	ND	5.0	µg/L	R	LR-SUR
2,4-Dimethylphenol	SW8270C	MKTF-49	2103532-004c	10	5.0	µg/L	J-	LR-SUR
2,4-Dinitrophenol	SW8270C	MKTF-49	2103532-004c	ND	5.0	µg/L	R	LR-SUR
2-Chlorophenol	SW8270C	MKTF-49	2103532-004c	ND	5.0	µg/L	R	LR-SUR
2-Methylnaphthalene	SW8270C	MKTF-11	2103532-006c	3.8	1.0	µg/L	J	ERPD-FD
2-Methylnaphthalene	SW8270C	DUP 3-10-21	2103532-013c	5.4	1.0	µg/L	J	ERPD-FD
2-Methylnaphthalene	SW8260B	MKTF-11	2103532-006a	5.9	20	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	DUP 3-10-21	2103532-013a	3.9	20	µg/L	J	MDLRL
2-Methylphenol	SW8270C	MKTF-49	2103532-004c	15	5.0	µg/L	J-	LR-SUR
2-Nitrophenol	SW8270C	MKTF-49	2103532-004c	ND	5.0	µg/L	R	LR-SUR
3,4-Methylphenol	SW8270C	MKTF-49	2103532-004c	ND	5.0	µg/L	R	LR-SUR
3,4-Methylphenol	SW8270C	MKTF-11	2103532-006c	11	5.0	µg/L	J	ERPD-FD
3,4-Methylphenol	SW8270C	DUP 3-10-21	2103532-013c	15	5.0	µg/L	J	ERPD-FD
4,6-Dinitro-2-methylphenol	SW8270C	MKTF-49	2103532-004c	ND	5.0	µg/L	R	LR-SUR
4-Chloro-3-Methylphenol	SW8270C	MKTF-49	2103532-004c	ND	5.0	µg/L	R	LR-SUR
4-Nitrophenol	SW8270C	MKTF-49	2103532-004c	ND	5.0	µg/L	R	LR-SUR
Acenaphthene	SW8270C	MKTF-10	2103532-005c	0.80	1.0	µg/L	J	MDLRL
Acenaphthene	SW8270C	MKTF-02	2103532-007d	0.40	1.0	µg/L	J	MDLRL
Acetone	SW8260B	STP-EP	2103532-012a	4.8	10	µg/L	J	MDLRL
Aluminum, Dissolved	E 200.7	MKTF-11	2103532-006E	0.0062	0.020	mg/L	J	MDLRL
Antimony, Total	E200.8	STP-EP	2103532-012F	0.0011	0.0010	mg/L	JB	MBD
Arsenic, Dissolved	E200.8	STP-1-NW	2103532-002E	0.0025	0.0050	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-50	2103532-003E	0.0017	0.0050	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-10	2103532-005E	0.0042	0.0050	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-02	2103532-007E	0.0011	0.0050	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	West LDU	2103532-009D	0.00026	0.0010	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	East LDU	2103532-010C	0.0026	0.0050	mg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Arsenic, Total	E200.8	STP-1-NW	2103532-002F	0.0026	0.0050	mg/L	U	MBD, MDLRL
Arsenic, Total	E200.8	West LDU	2103532-009E	0.00048	0.0010	mg/L	U	MBD, MDLRL
Beryllium, Dissolved	E 200.7	NAPIS-2	2103532-001E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	STP-1-NW	2103532-002E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	MKTF-50	2103532-003E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	MKTF-49	2103532-004E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	MKTF-10	2103532-005E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	MKTF-11	2103532-006E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	MKTF-02	2103532-007E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	OW-56	2103532-008E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	West LDU	2103532-009D	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	East LDU	2103532-010C	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	EB 3-10-21	2103532-011E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	STP-EP	2103532-012E	ND	0.0020	mg/L	UJ	LR-LCS
Beryllium, Dissolved	E 200.7	DUP 3-10-21	2103532-013D	ND	0.0020	mg/L	UJ	LR-LCS
Biochemical Oxygen Demand	SM 5210 B	STP-EP	2103532-012C	78	2.0	mg/L	J-	LR-LCS
Bis(2-ethylhexyl)phthalate	SW8270C	NAPIS-2	2103532-001c	10	10	µg/L	U	MBD
Bis(2-ethylhexyl)phthalate	SW8270C	STP-1-NW	2103532-002c	7.4	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-50	2103532-003c	8.8	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-49	2103532-004c	7.7	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-10	2103532-005c	7.5	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-11	2103532-006c	6.4	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-02	2103532-007d	6.7	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	DUP 3-10-21	2103532-013c	6.5	10	µg/L	U	MBD, MDLRL
Boron, Dissolved	E 200.7	West LDU	2103532-009D	0.016	0.040	mg/L	J	MDLRL
Boron, Total	E 200.7	West LDU	2103532-009E	0.014	0.040	mg/L	J	MDLRL
Boron, Total	E 200.7	East LDU	2103532-010D	0.029	0.040	mg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Carbazole	SW8270C	MKTF-49	2103532-004c	3.9	5.0	µg/L	J	MDLRL
Carbazole	SW8270C	MKTF-11	2103532-006c	4.4	5.0	µg/L	J	MDLRL
Carbazole	SW8270C	DUP 3-10-21	2103532-013c	4.4	5.0	µg/L	J	MDLRL
cis-1,2-Dichloroethene	SW8260B	MKTF-02	2103532-007a	2.9	5.0	µg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	MKTF-11	2103532-006E	0.011	0.0060	mg/L	J+	HR-LCS
Cobalt, Dissolved	E 200.7	MKTF-02	2103532-007E	0.0075	0.0060	mg/L	J+	HR-LCS
Cobalt, Dissolved	E 200.7	MKTF-49	2103532-004E	0.0034	0.0060	mg/L	J+	HR-LCS, MDLRL
Cobalt, Dissolved	E 200.7	MKTF-10	2103532-005E	0.0039	0.0060	mg/L	J+	HR-LCS, MDLRL
Cobalt, Dissolved	E 200.7	STP-EP	2103532-012E	0.0038	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	NAPIS-2	2103532-001F	0.0026	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	STP-1-NW	2103532-002F	0.0056	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-50	2103532-003F	0.0054	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-10	2103532-005F	0.0059	0.0060	mg/L	J	MDLRL
Copper, Dissolved	E 200.7	STP-EP	2103532-012E	0.0052	0.0060	mg/L	J	MDLRL
Copper, Total	E 200.7	EB 3-10-21	2103532-011F	ND	0.0060	mg/L	UJ	LR-LCS
Copper, Total	E 200.7	STP-1-NW	2103532-002F	0.0055	0.0060	mg/L	J	MDLRL
Dibenzofuran	SW8270C	NAPIS-2	2103532-001c	2.2	5.0	µg/L	J	MDLRL
Dibenzofuran	SW8270C	MKTF-50	2103532-003c	3.1	5.0	µg/L	J	MDLRL
Dibenzofuran	SW8270C	MKTF-49	2103532-004c	2.1	5.0	µg/L	J	MDLRL
Dibenzofuran	SW8270C	MKTF-10	2103532-005c	3.0	5.0	µg/L	J	MDLRL
Dibenzofuran	SW8270C	MKTF-11	2103532-006c	2.3	5.0	µg/L	J	MDLRL
Dibenzofuran	SW8270C	MKTF-02	2103532-007d	2.2	5.0	µg/L	J	MDLRL
Dibenzofuran	SW8270C	DUP 3-10-21	2103532-013c	2.3	5.0	µg/L	J	MDLRL
Di-n-butylphthalate	SW8270C	NAPIS-2	2103532-001c	7.1	10	µg/L	U	MBD, MDLRL
Di-n-butylphthalate	SW8270C	STP-1-NW	2103532-002c	6.8	10	µg/L	U	MBD, MDLRL
Di-n-butylphthalate	SW8270C	MKTF-50	2103532-003c	8.3	10	µg/L	U	MBD, MDLRL
Di-n-butylphthalate	SW8270C	MKTF-49	2103532-004c	8.1	10	µg/L	U	MBD, MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Di-n-butylphthalate	SW8270C	MKTF-10	2103532-005c	7.8	10	µg/L	U	MBD, MDLRL
Di-n-octylphthalate	SW8270C	NAPIS-2	2103532-001c	9.1	10	µg/L	U	MBD, MDLRL
Di-n-octylphthalate	SW8270C	STP-1-NW	2103532-002c	9.1	10	µg/L	U	MBD, MDLRL
Di-n-octylphthalate	SW8270C	MKTF-11	2103532-006c	9.4	10	µg/L	U	MBD, MDLRL
Di-n-octylphthalate	SW8270C	MKTF-02	2103532-007d	9.6	10	µg/L	U	MBD, MDLRL
Di-n-octylphthalate	SW8270C	DUP 3-10-21	2103532-013c	9.3	10	µg/L	U	MBD, MDLRL
Ethylbenzene	SW8260B	OW-56	2103532-008a	5.6	10	µg/L	J	MDLRL
Ethylbenzene	SW8260B	West LDU	2103532-009a	0.84	2.0	µg/L	J	MDLRL
Lead, Dissolved	E200.8	NAPIS-2	2103532-001E	0.00012	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	OW-56	2103532-008E	0.00015	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	STP-EP	2103532-012E	0.000043	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	STP-1-NW	2103532-002F	0.0014	0.0025	mg/L	U	MBD, MDLRL
Lead, Total	E200.8	MKTF-50	2103532-003F	0.00024	0.0005	mg/L	U	MBD, MDLRL
Lead, Total	E200.8	MKTF-49	2103532-004F	0.0019	0.0025	mg/L	U	MBD, MDLRL
Lead, Total	E200.8	MKTF-11	2103532-006F	0.00085	0.0025	mg/L	U	MBD, MDLRL
Lead, Total	E200.8	MKTF-02	2103532-007F	0.0005	0.0025	mg/L	U	MBD, MDLRL
Lead, Total	E200.8	West LDU	2103532-009E	0.000093	0.00050	mg/L	U	MBD, MDLRL
Lead, Total	E200.8	East LDU	2103532-010D	0.000068	0.00050	mg/L	U	MBD, MDLRL
Lead, Total	E200.8	STP-EP	2103532-012F	0.00021	0.00050	mg/L	U	MBD, MDLRL
Lead, Total	E200.8	DUP 3-10-21	2103532-013E	0.00083	0.0025	mg/L	U	MBD, MDLRL
Manganese, Dissolved	E 200.7	STP-1-NW	2103532-002E	0.00059	0.0020	mg/L	J	MDLRL
Molybdenum, Dissolved	E 200.7	OW-56	2103532-008E	0.0069	0.0080	mg/L	J	MDLRL
MTBE	SW8260B	STP-1-NW	2103532-002a	0.41	1.0	µg/L	J	MDLRL
MTBE	SW8260B	MKTF-49	2103532-004a	14	20	µg/L	J	MDLRL
MTBE	SW8260B	East LDU	2103532-010a	6.1	10	µg/L	J	MDLRL
Naphthalene	SW8260B	MKTF-02	2103532-007a	6.4	10	µg/L	J	MDLRL
Naphthalene	SW8260B	OW-56	2103532-008a	8.5	20	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
n-Butylbenzene	SW8260B	MKTF-50	2103532-003a	15	30	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-49	2103532-004a	6.0	60	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-11	2103532-006a	2.6	15	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-02	2103532-007a	4.8	15	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	DUP 3-10-21	2103532-013a	3.2	15	µg/L	J	MDLRL
Nickel, Dissolved	E 200.7	MKTF-49	2103532-004E	0.0053	0.010	mg/L	J	MDLRL
Nickel, Dissolved	E 200.7	STP-EP	2103532-012E	0.0076	0.010	mg/L	J	MDLRL
Nickel, Total	E 200.7	MKTF-50	2103532-003F	0.0083	0.010	mg/L	J	MDLRL
Nickel, Total	E 200.7	MKTF-49	2103532-004F	0.0047	0.010	mg/L	J	MDLRL
Nickel, Total	E 200.7	STP-EP	2103532-012F	0.0056	0.010	mg/L	J	MDLRL
Nitrogen, Nitrate	E300	MKTF-02	2103532-007G	0.28	0.50	mg/L	J	MDLRL
Nitrogen, Nitrate	E300	DUP 3-10-21	2103532-013F	0.26	0.50	mg/L	J	MDLRL
Pentachlorophenol	SW8270C	MKTF-49	2103532-004c	ND	5.0	µg/L	R	LR-SUR
Phenol	SW8270C	MKTF-49	2103532-004c	51	5.0	µg/L	J-	LR-SUR
p-Isopropyltoluene	SW8260B	MKTF-50	2103532-003a	3.9	10	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	MKTF-49	2103532-004a	9.6	20	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	MKTF-10	2103532-005a	4.3	5.0	µg/L	J	MDLRL
Potassium, Dissolved	E 200.7	NAPIS-2	2103532-001E	0.22	1.0	mg/L	J	MDLRL
Potassium, Dissolved	E 200.7	MKTF-10	2103532-005E	0.60	1.0	mg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-11	2103532-006a	3.4	5.0	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-02	2103532-007a	4.0	5.0	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	DUP 3-10-21	2103532-013a	3.6	5.0	µg/L	J	MDLRL
Selenium, Dissolved	E200.8	STP-EP	2103532-012E	0.00080	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	East LDU	2103532-010D	0.00074	0.0010	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	NAPIS-2	2103532-001E	0.0013	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-50	2103532-003E	0.0019	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-49	2103532-004E	0.0039	0.0050	mg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Silver, Dissolved	E 200.7	MKTF-10	2103532-005E	0.0039	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-11	2103532-006E	0.0043	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	OW-56	2103532-008E	0.0014	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	STP-EP	2103532-012E	0.0039	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	DUP 3-10-21	2103532-013D	0.0039	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	NAPIS-2	2103532-001F	0.0020	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	STP-1-NW	2103532-002F	0.0023	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-50	2103532-003F	0.0035	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-11	2103532-006F	0.0047	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	OW-56	2103532-008F	0.0019	0.0050	mg/L	J	MDLRL
Sulfate	E300	NAPIS-2	2103532-001D	1.9	2.5	mg/L	J	MDLRL
Toluene	SW8260B	West LDU	2103532-009a	1.5	2.0	µg/L	J	MDLRL
TPH GRO	SW8015	STP-1-NW	2103532-002a	0.016	0.050	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	EB 3-10-21	2103532-011a	0.016	0.050	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	STP-EP	2103532-012a	0.020	0.050	mg/L	U	MBD, MDLRL
Xylenes, Total	SW8260B	MKTF-50	2103532-003a	560	15	µg/L	J	ERPD-FD
Xylenes, Total	SW8260B	MKTF-49	2103532-004a	6,400	300	µg/L	J	ERPD-FD
Xylenes, Total	SW8260B	MKTF-10	2103532-005a	7,000	150	µg/L	J	ERPD-FD
Xylenes, Total	SW8260B	MKTF-11	2103532-006a	690	7.5	µg/L	J	ERPD-FD
Xylenes, Total	SW8260B	MKTF-02	2103532-007a	46	7.5	µg/L	J	ERPD-FD
Xylenes, Total	SW8260B	OW-56	2103532-008a	220	15	µg/L	J	ERPD-FD
Xylenes, Total	SW8260B	West LDU	2103532-009a	12	3.0	µg/L	J	ERPD-FD
Xylenes, Total	SW8260B	East LDU	2103532-010a	56	15	µg/L	J	ERPD-FD
Xylenes, Total	SW8260B	DUP 3-10-21	2103532-013a	220	7.5	µg/L	J	ERPD-FD
Xylenes, Total	SW8260B	NAPIS-2	2103532-001a	ND	15	µg/L	UJ	ERPD-FD
Xylenes, Total	SW8260B	STP-1-NW	2103532-002a	ND	1.5	µg/L	UJ	ERPD-FD
Xylenes, Total	SW8260B	EB 3-10-21	2103532-011a	ND	1.5	µg/L	UJ	ERPD-FD

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Xylenes, Total	SW8260B	STP-EP	2103532-012a	ND	1.5	µg/L	UJ	ERPD-FD
Xylenes, Total	SW8260B	Trip Blank	2103532-014a	ND	1.5	µg/L	UJ	ERPD-FD
Zinc, Dissolved	E 200.7	STP-1-NW	2103532-002E	0.021	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	MKTF-11	2103532-006E	0.021	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	West LDU	2103532-009D	0.023	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	STP-EP	2103532-012E	0.037	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	DUP 3-10-21	2103532-013D	0.026	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	NAPIS-2	2103532-001E	0.015	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	MKTF-49	2103532-004E	0.016	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	MKTF-10	2103532-005E	0.013	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	MKTF-02	2103532-007E	0.014	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	OW-56	2103532-008E	0.016	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	MKTF-50	2103532-003E	0.0062	0.010	mg/L	U	EBD, MDLRL

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-001 Task: 0016	Sample Start Date: 03/10/2021
Date Validated: 02/07/2022	Sample End Date: 03/11/2021
Parameters Included: ▪ Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B ▪ 1,2-Dibromoethane (EDB) by EPA Method 504.1 ▪ Semivolatile Organic Compounds (SVOC) by SW-846 Methods 8270C and 8270C with Selective Ion Monitoring (SIM) ▪ Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D ▪ TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified ▪ Total and Dissolved Metals by EPA Methods 200.7 and 200.8 ▪ Total and Dissolved Mercury by EPA Method 245.1 ▪ Anions by EPA Method 300.0	
Laboratory Project ID: 2103612	
Data Validator: Daran O'Hollearn, Lead Project Scientist	
Reviewer: Mike Phillips, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

Tier II Data Validation Report Summary

- Equipment blanks
- Field blanks
- Trip blanks

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
BW-4B	2103612-001
MKTF-44	2103612-002
MKTF-47	2103612-003
MKTF-38	2103612-004
MKTF-35	2103612-005
MKTF-18	2103612-006
EB 3-11-21	2103612-007
DUP 3-11-21	2103612-008
Field Blank 3-10-2021	2103612-009
Field Blank 3-11-2021	2103612-010
MKTF-16	2103612-011
MKTF-21	2103612-012
Trip Blank	2103612-013

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ⊗ Holding Times and Preservation (Items 6 and 7)
- ○ Initial and Continuing Calibrations (Items 9 and 10)
- ⊗ Laboratory Blanks (Items 11 and 12)
- ⊗ MS/MSD (Items 13 and 14)
- ⊗ LCS/LCSD (Items 15 and 16)
- ⊗ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Field, Equipment, and Trip Blanks (Items 18 and 19)
- ⊗ Field Duplicates (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)
- ⊗ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
J+	The result is an estimated concentration, but may be biased high
J-	The result is an estimated concentration, but may be biased low
UJ	Estimated reporting limit
U	Evaluated to be undetected at the reporting limit
JB	Estimated concentration due to blank contamination

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 1,418 data points. The data completeness calculation does not include any submitted blank sample results. Data points were not rejected. The data completeness measure for this data package is calculated to be 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST

1. Was the report free of non-conformances identified by the laboratory? No

Comments: The laboratory noted the following analytical non-conformances related to this data set.

Method 8015D DRO: The samples listed below had a single contaminant peak that was identified in the QC and the samples listed below. The contaminant peak was manually removed from the summation of the diesel range organics results. The concentration of the contaminant peak, in the samples that was removed, is listed next to the sample name: MKTF-44 (2.7mg/L), MKTF-38 (3.1mg/L), Dup 3 11-21 (0.62mg/L), LCS 58760 (LCS 0.02mg/L), and LCSD 58760 (1.05mg/L). We are researching the source of the contamination to prevent this peak from appearing in the future.

2. Were the data free of data qualification flags and/or notes used by the laboratory? No
If no, define.

Comments: The laboratory used the following data qualification flags with this data set.

J – Analyte detected below quantitation limits.

P – Sample pH not in range.

R – % RPD outside of range.

S – % Recovery outside of range due to dilution or matrix.

* – Value exceeds maximum contaminant level.

3. Were sample CoC forms and custody procedures complete? Yes

Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.

4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable? Yes

Comments: The detection limits appeared to be acceptable. The following dilutions were applied.

Method	Sample(s)	Analyte(s)	Dilution Factor
8015D	MKTF-21	GRO	2
8260B	MKTF-21	VOC	2
200.7	Multiple Samples	Select Dissolved and Total Metals	5
200.8	MKTF-35	Total Antimony and Lead	5
200.8	MKTF-21	Total Arsenic	5
300.0	Multiple Samples	Select Anions	5
200.7	Multiple Samples	Select Dissolved and Total Metals	10
8015D	MKTF-35, DUP 3-11-21	GRO	10
8260B	MKTF-35, DUP 3-11-21	Select VOC	10
8270C	MKTF-35, DUP 3-11-21	Naphthalene	10
8270C	MKTF-18	1-Methylnaphthalene	10
200.7	DUP 3-11-21	Total Aluminum and Iron	20
300.0	Multiple Samples	Select Anions	20
200.7	MKTF-35	Total Aluminum and Iron	50
300.0	MKTF-47, MKTF-38	Chloride	50
8015D	MKTF-16	GRO	100
8260B	MKTF-35, DUP 3-11-21	Benzene	100
8260B	MKTF-16	VOC	100

VALIDATION CRITERIA CHECKLIST

Method	Sample(s)	Analyte(s)	Dilution Factor
8260B	MKTF-18	Benzene	200
200.7	MKTF-21	Total Iron	200

5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC? Yes

Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.

6. Were samples received in good condition within method-specified requirements? No

Comments: Samples were received on ice, in good condition, and with the cooler temperatures both within and outside the recommended temperature range of 4°C ± 2°C between 4.1°C and 7.8°C as noted on the CoC and Sample Log-in Check List.

The cooler temperature above 6°C was evaluated to be acceptable since the samples were received at the laboratory on the same day (within 24 hours) of the last sample collection time, and temperature equilibrium had not been established.

A preserved vial was submitted for the Method 8260B analysis for sample Trip Blank, but the pH at the time of analysis was greater than 2. Following EPA defined actions, the holding time for this sample was reduced from 14 days to 7 days from sampling to analysis.

7. Were samples extracted/digested and analyzed within method-specified or technical holding times? No

Comments: The samples were extracted/digested and analyzed within method-specific and reduced holding times, with the following exception.

Method 8260B: **VOCs were analyzed outside the reduced holding time of 7 days for sample Trip Blank by approximately 1 day. The VOC target analytes were not detected in the sample Trip Blank. These results were qualified as UJ due to the holding time exceedance.**

8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil. Yes

Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.

9. Did the laboratory provide any specific initial and/or continuing calibration results? No

Comments: Initial and continuing calibration data were not included as part of this data set.

10. If initial and/or continuing calibration results were provided, were the results within acceptable limits? N/A

Comments: Initial and continuing calibration data were not included as part of this data set.

11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.

VALIDATION CRITERIA CHECKLIST

12. Were target analytes reported as not detected in the laboratory blanks? No

Comments: Target analytes were reported as not detected in the laboratory blanks, with the following exceptions.

Method	Analyte	Batch	Concentration
200.8	**Lead**	**58726**	**0.000035 mg/L**
8260B	Methylene Chloride	A76055	0.41 µg/L
8270C	**Bis(2-ethylhexyl)phthalate**	**58720**	**8.4 µg/L**
8270C	Di-n-butyl phthalate	58720	7.7 µg/L
8270C	**Di-n-octyl phthalate**	**58720**	**9.2 µg/L**
8270C	**Bis(2-ethylhexyl)phthalate**	**58736**	**6.9 µg/L**
8270C	**Di-n-butyl phthalate**	**58736**	**6.6 µg/L**
8270C	**Di-n-octyl phthalate**	**58736**	**9.1 µg/L**
8015D	**GRO**	**B76015**	**0.017 mg/L**
8015D	**GRO**	**B76055**	**0.017 mg/L**
8015D	GRO	B76093	0.014 mg/L

Detections of the identified analytes in the associated samples that were less than the blank results and/or less than the applicable reporting limits were assigned U qualifiers. Non-detections of the identified analytes in the associated samples and detections that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batches. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
200.7	Total Metals	58726	MKTF-18
200.7	Dissolved Metals	A76034	EB 3-11-21
200.7	Dissolved Metals	A76065	MKTF-47, MKTF-35
200.7	Dissolved Metals	A76106	MKTF-18
200.8	Total Metals	58726	MKTF-35
200.8	Dissolved Metals	B75953	BW-4B
200.8	Dissolved Sodium	B75975	Not Prepared
245.1	Total Mercury	58766	Not Prepared
245.1	Dissolved Mercury	58801	MKTF-38
300.0	Anions	R75904	Not Prepared
300.0	Chloride	R75934	Not Prepared
504.1	EDB	58711	Not Prepared
8015D	TPH DRO and MRO	58760	Not Prepared
8015D	GRO	B76015	Not Prepared
8015D	GRO	B76055	Not Prepared
8015D	GRO	B76093	MKTF-44
8260B	VOC	A76015	Not Prepared
8260B	VOC	A76055	Not Prepared

VALIDATION CRITERIA CHECKLIST

Method	Analytes	Batch	MS Sample Source
8260B	VOC	A76093	MKTF-44
8260B	VOC	R76128	Not Prepared
8270 SIM	SVOC	58709	Not Prepared
8270 SIM	SVOC	58715	Not Prepared
8270C	SVOC	58720	Not Prepared
8270C	SVOC	58736	Not Prepared

Not Prepared – Matrix spikes were not prepared/reported for this batch.

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? No

Comments: The percent recoveries and RPDs for MS/MSDs prepared from project samples were within data validation and laboratory QC limits or were not applicable because the unspiked amount was more than four times the spike added, with the following exceptions.

Method	Analyte	Batch	MS Recovery	MSD Recovery	MS/MSD QC Limits	MS/MSD RPD	RPD QC Limits
200.7	**Total Aluminum**	**58726**	**211%**	**208%**	**75-125%**	**Acceptable**	**20%**
200.8	**Total Antimony**	**58726**	**30.7%**	**----**	**75-125%**	**----**	**----**
8260B	**Benzene**	**A76093**	**Acceptable**	**Acceptable**	**70-130%**	**22.3%**	**20%**
8260B	**Toluene**	**A76093**	**Acceptable**	**Acceptable**	**70-130%**	**20.2%**	**20%**
8260B	**1,1-Dichloroethene**	**A76093**	**Acceptable**	**Acceptable**	**70-130%**	**21.3%**	**20%**

Total aluminum with MS and MSD recoveries greater than the laboratory or data validation QC limits were detected in the associated samples, and the results were qualified as J+ due to potential high bias. Non-detections of total aluminum in the associated samples did not require qualification.

Total antimony was detected in the associated sample MKTF-21. This result was qualified as J- due to evidence of potential low bias. Non-detections of total antimony in the associated samples were qualified as UJ.

The analytes with MS/MSD RPD values that were above the QC limit were qualified as J for detections and UJ for non-detections for the associated samples due to evidence of poor precision.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

VALIDATION CRITERIA CHECKLIST

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? No

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits, with the following exceptions.

Method	Analyte	Batch	LCS Recovery	LCSD Recovery	LCS/LCSD QC Limits	LCS/LCSD RPD	RPD QC Limits
200.7	**Total Nickel**	**58726**	**138%**	**----**	**70-130%**	**----**	**----**
200.7	Dissolved Beryllium	A76034	134%	----	70-130%	----	----
8270 SIM	Benz(a)anthracene	58715	114%	119%	38.7-111%	Acceptable	20%
8270 SIM	Benzo(b)fluoranthene	58715	117%	120%	23.8-113%	Acceptable	20%
8270 SIM	Dibenz(a,h)anthracene	58715	Acceptable	118%	17.8-118%	Acceptable	20%
8270 SIM	**Indeno(1,2,3-cd)pyrene**	**58715**	**138%**	**241%**	**20.8-115%**	**54.4%**	**20%**

Detections of total nickel in the associated samples were qualified as J+ due to evidence of potential high bias. Non-detections of the identified analytes in the associated samples did not require qualification.

Indeno(1,2,3-cd)pyrene was not detected in the associated samples. These associated indeno(1,2,3-cd)pyrene results were qualified as UJ due to evidence of poor precision.

17. Were surrogate recoveries within laboratory QC limits? No

Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions.

Since Method 8270C and 8270 SIM surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes in a given fraction (acid or base/neutral) when two or more surrogates from the same fraction (acid or base/neutral) were outside the acceptance range. This condition did not exist for the samples MKTF-35 and DUP 3-11-21, and qualification of sample data was not required.

The Method 8015D surrogate bromofluorobenzene was recovered in sample MKTF-21 above the acceptance limit of 70-130% at 132%. The target analyte GRO associated with this surrogate was detected in sample MKTF-21, and this result was assigned a J+ qualifier due to evidence of potential high bias.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One trip blank sample, Trip Blank, two field blank samples, Field Blank 3-10-2021 and Field Blank 3-11-2021, and one equipment blank sample, EB 3-11-2021, were collected as part of this sample set.

VALIDATION CRITERIA CHECKLIST

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
Field Blank 3-10-2021	8015D	GRO	0.018 mg/L
Field Blank 3-11-2021	8015D	GRO	0.017 mg/L
EB 3-11-21	**200.7**	**Dissolved Zinc**	**0.016 mg/L**
EB 3-11-21	**300.0**	**Nitrate**	**0.037 mg/L**

Detections of dissolved zinc and nitrate as N in the associated samples that were less than the blank results and/or less than the applicable reporting limits were assigned U qualifiers. The detection of dissolved zinc in sample BW-4B that was greater than the reporting limit but less than 10 times the blank result was assigned a JB qualifier. Non-detections of nitrate as N in the associated samples and detections of nitrate as N that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

The GRO results for the samples in batch B76015 and B76055 were previously qualified due to laboratory blank contamination; therefore, additional qualification due to the equipment blank contamination was not required.

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample DUP 3-11-21 was collected as a field duplicate of sample MKTF-35.

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? No

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples, with the following exceptions.

The RPD values for multiple analytes exceeded the data validation limit of 30%. These analyte results were assigned J qualifiers for samples MKTF-35 and DUP 3-11-21 due to evidence of poor precision.

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? N/A

Comments: Laboratory duplicate samples were not prepared for this sample set.

VALIDATION CRITERIA CHECKLIST

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? No

Comments: Target analytes were not reported by more than one method in this data set, with the following exceptions.

Target analytes 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1-methylnaphthalene, 2-methylnaphthalene, hexachlorobutadiene, and naphthalene were reported by both Method 8260B and Method 8270C. 1,2-Dibromoethane was reported from analyses by both Method 8260B and 504.1. These analytes were reported as not detected by both methods, or one or both results were within 5 times the applicable reporting limit, with the following exception.

The analytes 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were detected in sample MKTF-18 by Methods 8260B and 8270C SIM at concentrations greater than 5 times the applicable reporting limit. Based on the differences between the findings, the 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene results for sample MKTF-18 were assigned J/UJ qualifiers.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
MKTF-18	Barium	2.3	2.4	0.010 / 0.015	mg/L	4.3%
DUP 3-11-21	Boron	0.26	0.27	0.040 / 0.040	mg/L	3.8%
MKTF-18	Manganese	2.4	2.5	0.010 / 0.010	mg/L	4.1%
BW-48	Molybdenum	0.023	0.025	0.0080 / 0.0080	mg/L	8.3%
MKTF-18	Nickel	0.0036	0.0085	0.010 / 0.010	mg/L	81.0% ♦
Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
MKTF-47	Zinc	ND	0.0080	0.010 / 0.010	mg/L	----- ♦
MKTF-38	Zinc	ND	0.012	0.010 / 0.010	mg/L	----- ♦
MKTF-18	Zinc	ND	0.015	0.010 / 0.010	mg/L	----- ♦
EB 3-11-21	Zinc	ND	0.016	0.010 / 0.010	mg/L	----- ♦

----- *RPD could not be calculated.*

♦ *= One or both of the detections were less than 2 times the applicable reporting limits, and qualification of data was not required.*

The differences for the corresponding analytical results were within five times the applicable reporting limits and validation action was not required, or the RPDs between the results were less than 30% indicating that the data were within the measurement uncertainty for the methods, and qualification of results was not required based on the analytical inconsistencies.

FIELD DUPLICATE SUMMARY

Client Sample ID: MKTF-35 Field Duplicate Sample ID: DUP 3-11-21				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Aluminum, Dissolved	**E 200.7**	**0.14 mg/L**	**0.10 mg/L**	**33.3%**
Aluminum, Total	E 200.7	21 mg/L	16 mg/L	27.0%
Barium, Dissolved	E 200.7	2.6 mg/L	2.6 mg/L	0.0%
Barium, Total	E 200.7	5.8 mg/L	4.4 mg/L	27.5%
Boron, Dissolved	E 200.7	0.26 mg/L	0.27 mg/L	3.8%
Boron, Total	E 200.7	0.26 mg/L	0.26 mg/L	0.0%
Calcium, Dissolved	E 200.7	180 mg/L	190 mg/L	5.4%
Chromium, Total	E 200.7	0.0097 mg/L	0.0082 mg/L	16.8% +/-RL
Cobalt, Dissolved	E 200.7	ND (0.0060 mg/L)	0.0030 mg/L	DL
Cobalt, Total	**E 200.7**	**0.014 mg/L**	**0.0078 mg/L**	**56.9%**
Copper, Dissolved	E 200.7	0.0054 mg/L	ND (0.0060) mg/L	DL
Copper, Total	E 200.7	0.012 mg/L	0.0075 mg/L	46.2% +/-RL
Iron, Dissolved	E 200.7	4.8 mg/L	4.9 mg/L	2.1%
Iron, Total	**E 200.7**	**15 mg/L**	**11 mg/L**	**30.8%**
Magnesium, Dissolved	E 200.7	51 mg/L	53 mg/L	3.8%
Manganese, Dissolved	E 200.7	3 mg/L	3.2 mg/L	6.5%
Manganese, Total	E 200.7	5.2 mg/L	3.9 mg/L	28.6%
Nickel, Dissolved	E 200.7	0.0034 mg/L	0.0041 mg/L	18.7% +/-RL
Nickel, Total	E 200.7	0.014 mg/L	0.012 mg/L	15.4% +/-RL
Potassium, Dissolved	E 200.7	0.48 mg/L	0.45 mg/L	6.5% +/-RL
Silver, Dissolved	E 200.7	0.0023 mg/L	0.0019 mg/L	19.0% +/-RL
Silver, Total	E 200.7	0.0032 mg/L	0.0031 mg/L	3.2% +/-RL
Sodium, Dissolved	E 200.7	220 mg/L	230 mg/L	4.4%
Zinc, Dissolved	E 200.7	0.012 mg/L	0.014 mg/L	15.4% +/-RL
Zinc, Total	**E 200.7**	**0.027 mg/L**	**0.019 mg/L**	**34.8%**
Arsenic, Dissolved	E200.8	0.00029 mg/L	0.00030 mg/L	3.4% +/-RL
Arsenic, Total	**E200.8**	**0.0040 mg/L**	**0.0023 mg/L**	**54.0%**
Lead, Dissolved	E200.8	0.00029 mg/L	0.00027 mg/L	7.1% +/-RL
Lead, Total	**E200.8**	**0.015 mg/L**	**0.0097 mg/L**	**42.9%**
Selenium, Total	E200.8	0.0020 mg/L	0.0014 mg/L	35.3% +/-RL
Bromide	E300	0.80 mg/L	0.79 mg/L	1.3% +/-RL
Chloride	E300	360 mg/L	360 mg/L	0.0%
Fluoride, Total	E300	0.59 mg/L	0.59 mg/L	0.0% +/-RL
Nitrogen, Nitrate	E300	ND (0.50 mg/L)	0.12 mg/L	DL
TPH DRO	SW8015	0.82 mg/L	0.88 mg/L	7.1%
TPH GRO	SW8015	15 mg/L	14 mg/L	6.9%
1,2,4-Trimethylbenzene	SW8260B	240 µg/L	250 µg/L	4.1%
1,3,5-Trimethylbenzene	SW8260B	13 µg/L	13 µg/L	0.0% +/-RL

Analyte	Method	Laboratory Result	Duplicate Result	Relative Percent Difference (RPD)
2-Methylnaphthalene	SW8260B	7.7 µg/L	8.1 µg/L	5.1% +/-RL
Benzene	SW8260B	3,400 µg/L	3,300 µg/L	3.0%
Ethylbenzene	SW8260B	520 µg/L	490 µg/L	5.9%
Isopropylbenzene	SW8260B	19 µg/L	18 µg/L	5.4% +/-RL
MTBE	SW8260B	110 ug/L	110 ug/L	0.0%
Naphthalene	SW8260B	53 ug/L	55 ug/L	3.7%
n-Butylbenzene	SW8260B	3.1 µg/L	3.4 µg/L	9.2% +/-RL
1n-Propylbenzene	SW8260B	52 µg/L	52 µg/L	0.0%
Toluene	SW8260B	100 µg/L	99 µg/L	1.0%
Xylenes, Total	SW8260B	940 µg/L	910 µg/L	3.2%
1,4-Dichlorobenzene	SW8270C	1.2 µg/L	ND (5.0 µg/L)	DL
1-Methylnaphthalene	SW8270C	5.1 µg/L	6.0 µg/L	16.2%
2,4-Dimethylphenol	SW8270C	5.5 µg/L	5.2 µg/L	5.6% +/-RL
2-Methylnaphthalene	SW8270C	5.8 µg/L	6.9 µg/L	17.3%
2-Methylphenol	SW8270C	1.1 µg/L	0.69 µg/L	45.8% +/-RL
Acenaphthene	SW8270C	1.7 µg/L	1.9 µg/L	11.1%
Anthracene	SW8270C	0.34 µg/L	0.38 µg/L	11.1%
Bis(2-ethylhexyl)phthalate	SW8270C	7.1 µg/L	6.6 µg/L	7.3% +/-RL
Carbazole	SW8270C	3.9 µg/L	3.8 µg/L	2.6% +/-RL
Dibenzofuran	SW8270C	3.1 µg/L	2.6 µg/L	17.5% +/-RL
Di-n-butylphthalate	SW8270C	6.7 µg/L	6.5 µg/L	3.0% +/-RL
Di-n-octylphthalate	SW8270C	9.2 µg/L	ND (10 µg/L)	DL
Fluoranthene	SW8270C	ND (0.20 µg/L)	0.20 µg/L	DL
Fluorene	SW8270C	0.26 µg/L	0.30 µg/L	14.3%
Naphthalene	SW8270C	39 µg/L	46 µg/L	16.5%
Phenol	**SW8270C**	**41 µg/L**	**21 µg/L**	**64.5%**
Pyrene	SW8270C	ND (0.20 µg/L)	0.16 µg/L	DL

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD values for multiple analytes exceeded the data validation limit of 30%, which was evidence of poor precision. These analyte results were qualified as J for samples MKTF-35 and DUP 3-11-21.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
pH-PR	Sample chemical preservation was not met.
HT-AN	Sample was analyzed outside of the method holding time.
MBD	Method blank detection
EBD	Equipment blank detection
LR-MS	The MS and/or MSD percent recovery was less than the lower acceptable limit indicating possible matrix interference.
HR-MS	The MS and/or MSD percent recovery was greater than the upper acceptable limit indicating possible matrix interference.
ERPD-MS	The MS/MSD RPD exceeded the upper acceptable limit indicating poor precision.
HR-LCS	The LCS and/or LCSD percent recovery was greater than the upper acceptable limit indicating a possible high bias.
ERPD-LCS	The LCS/LCSD RPD exceeded the upper acceptable limit indicating poor precision.
HR-SUR	The surrogate percent recovery was greater than the upper acceptable limit indicating a possible high bias.
ERPD-FD	High field duplicate RPD.
DATA-COMP	Analytical results for analyte by different methods did not meet comparability limits.
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,1,1,2-Tetrachloroethane	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,1,1-Trichloroethane	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,1,2,2-Tetrachloroethane	SW8260B	Trip Blank	2103612-013a	ND	2.0	µg/L	UJ	HT-AN, pH-PR
1,1,2-Trichloroethane	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,1-Dichloroethane	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,1-Dichloroethane	SW8260B	MKTF-38	2103612-004a	0.4	1.0	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	MKTF-18	2103612-006a	0.57	1.0	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	MKTF-16	2103612-011a	68	100	µg/L	J	MDLRL
1,1-Dichloroethene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,1-Dichloroethene	SW8260B	DUP 3-11-21	2103612-008a	ND	10	µg/L	UJ	ERPD-MS
1,1-Dichloroethene	SW8260B	MKTF-21	2103612-012a	ND	2.0	µg/L	UJ	ERPD-MS
1,1-Dichloroethene	SW8260B	MKTF-18	2103612-006a	0.38	1.0	µg/L	J	MDLRL
1,1-Dichloropropene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,2,3-Trichlorobenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,2,3-Trichloropropane	SW8260B	Trip Blank	2103612-013a	ND	2.0	µg/L	UJ	HT-AN, pH-PR
1,2,4-Trichlorobenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,2,4-Trimethylbenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,2-Dibromo-3-Chloropropane	SW8260B	Trip Blank	2103612-013a	ND	2.0	µg/L	UJ	HT-AN, pH-PR
1,2-Dibromoethane	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,2-Dibromoethane	E504.1	Trip Blank	2103612-013B	ND	0.0094	µg/L	UJ	HT-AN, pH-PR
1,2-Dichlorobenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,2-Dichloroethane	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,2-Dichloroethane	SW8260B	MKTF-18	2103612-006a	0.42	1.0	µg/L	J	MDLRL
1,2-Dichloropropane	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,3,5-Trimethylbenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,3-Dichlorobenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,3-Dichloropropane	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,4-Dichlorobenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
1,4-Dichlorobenzene	SW8270C	MKTF-35	2103612-005c	1.2	5.0	µg/L	J	MDLRL
1,4-Dioxane	SW8270C	MKTF-38	2103612-004c	0.48	1.0	µg/L	J	MDLRL
1-Methylnaphthalene	SW8260B	Trip Blank	2103612-013a	ND	4.0	µg/L	UJ	HT-AN, pH-PR
1-Methylnaphthalene	SW8260B	MKTF-18	2103612-006a	89	4.0	µg/L	J	DATA-COMP
1-Methylnaphthalene	SW8270C	MKTF-18	2103612-006c	48	1.0	µg/L	J	DATA-COMP
2,2-Dichloropropane	SW8260B	Trip Blank	2103612-013a	ND	2.0	µg/L	UJ	HT-AN, pH-PR
2,4-Dimethylphenol	SW8270C	MKTF-18	2103612-006c	2.7	5.0	µg/L	J	MDLRL
2-Butanone	SW8260B	Trip Blank	2103612-013a	ND	10	µg/L	UJ	HT-AN, pH-PR

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
2-Chlorotoluene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
2-Hexanone	SW8260B	Trip Blank	2103612-013a	ND	10	µg/L	UJ	HT-AN, pH-PR
2-Methylnaphthalene	SW8260B	Trip Blank	2103612-013a	ND	4.0	µg/L	UJ	HT-AN, pH-PR
2-Methylnaphthalene	SW8260B	MKTF-35	2103612-005a	7.7	40	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	DUP 3-11-21	2103612-008a	8.1	40	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	MKTF-18	2103612-006a	21	4.0	µg/L	J	DATA-COMP
2-Methylnaphthalene	SW8270C	MKTF-18	2103612-006c	9.4	0.10	µg/L	J	DATA-COMP
2-Methylphenol	SW8270C	MKTF-35	2103612-005c	1.1	5.0	µg/L	J	MDLRL
2-Methylphenol	SW8270C	DUP 3-11-21	2103612-008c	0.69	5.0	µg/L	J	MDLRL
4-Chlorotoluene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
4-Methyl-2-Pentanone	SW8260B	Trip Blank	2103612-013a	ND	10	µg/L	UJ	HT-AN, pH-PR
4-Methyl-2-Pentanone	SW8260B	MKTF-21	2103612-012a	13	20	µg/L	J	MDLRL
Acetone	SW8260B	Trip Blank	2103612-013a	ND	10	µg/L	UJ	HT-AN, pH-PR
Aluminum, Dissolved	E 200.7	MKTF-35	2103612-005F	0.14	0.02	mg/L	J	ERPD-FD
Aluminum, Dissolved	E 200.7	DUP 3-11-21	2103612-008F	0.10	0.02	mg/L	J	ERPD-FD
Aluminum, Total	E 200.7	BW-4B	2103612-001E	7.3	0.20	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	MKTF-44	2103612-002F	6.1	0.20	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	MKTF-47	2103612-003F	2.4	0.10	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	MKTF-38	2103612-004F	0.73	0.020	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	MKTF-35	2103612-005G	21	1.0	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	MKTF-18	2103612-006G	0.81	0.10	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	DUP 3-11-21	2103612-008G	16	0.40	mg/L	J+	HR-MS
Aluminum, Total	E 200.7	MKTF-21	2103612-012D	2.9	0.10	mg/L	J+	HR-MS
Antimony, Dissolved	E200.8	BW-4B	2103612-001D	0.00072	0.0010	mg/L	J	MDLRL
Antimony, Total	E200.8	MKTF-21	2103612-012D	0.0012	0.0010	mg/L	J-	LR-MS
Antimony, Total	E200.8	BW-4B	2103612-001E	ND	0.0010	mg/L	UJ	LR-MS
Antimony, Total	E200.8	MKTF-44	2103612-002F	ND	0.0010	mg/L	UJ	LR-MS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Antimony, Total	E200.8	MKTF-47	2103612-003F	ND	0.0010	mg/L	UJ	LR-MS
Antimony, Total	E200.8	MKTF-38	2103612-004F	ND	0.0010	mg/L	UJ	LR-MS
Antimony, Total	E200.8	MKTF-35	2103612-005G	ND	0.0050	mg/L	UJ	LR-MS
Antimony, Total	E200.8	MKTF-18	2103612-006G	ND	0.0010	mg/L	UJ	LR-MS
Antimony, Total	E200.8	EB 3-11-21	2103612-007F	ND	0.0010	mg/L	UJ	LR-MS
Antimony, Total	E200.8	DUP 3-11-21	2103612-008G	ND	0.0010	mg/L	UJ	LR-MS
Arsenic, Dissolved	E200.8	MKTF-47	2103612-003E	0.00051	0.0010	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-38	2103612-004E	0.00049	0.0010	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-35	2103612-005F	0.00029	0.0010	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	DUP 3-11-21	2103612-008F	0.00030	0.0010	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-35	2103612-005G	0.0040	0.0010	mg/L	J	ERPD-FD
Arsenic, Total	E200.8	DUP 3-11-21	2103612-008G	0.0023	0.0010	mg/L	J	ERPD-FD
Arsenic, Total	E200.8	MKTF-47	2103612-003F	0.00063	0.0010	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-38	2103612-004F	0.00053	0.0010	mg/L	J	MDLRL
Benzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Benzene	SW8260B	MKTF-35	2103612-005a	3,400	100	µg/L	J	ERPD-MS
Benzene	SW8260B	MKTF-18	2103612-006a	560	200	µg/L	J	ERPD-MS
Benzene	SW8260B	DUP 3-11-21	2103612-008a	3,300	100	µg/L	J	ERPD-MS
Benzene	SW8260B	MKTF-21	2103612-012a	18	2.0	µg/L	J	ERPD-MS
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-38	2103612-004c	6.9	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-35	2103612-005c	7.1	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	DUP 3-11-21	2103612-008c	6.6	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-44	2103612-002c	33	45	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-47	2103612-003c	6.4	10	µg/L	U	MBD, MDLRL
Bromobenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Bromodichloromethane	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Bromodichloromethane	SW8260B	MKTF-47	2103612-003a	0.25	1.0	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Bromoform	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Bromomethane	SW8260B	Trip Blank	2103612-013a	ND	3.0	µg/L	UJ	HT-AN, pH-PR
Carbazole	SW8270C	MKTF-35	2103612-005c	3.9	5.0	µg/L	J	MDLRL
Carbazole	SW8270C	DUP 3-11-21	2103612-008c	3.8	5.0	µg/L	J	MDLRL
Carbon Disulfide	SW8260B	Trip Blank	2103612-013a	ND	10	µg/L	UJ	HT-AN, pH-PR
Carbon tetrachloride	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Chlorobenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Chloroethane	SW8260B	Trip Blank	2103612-013a	ND	2.0	µg/L	UJ	HT-AN, pH-PR
Chloroform	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Chloroform	SW8260B	MKTF-47	2103612-003a	0.32	1.0	µg/L	J	MDLRL
Chloroform	SW8260B	MKTF-38	2103612-004a	0.51	1.0	µg/L	J	MDLRL
Chloromethane	SW8260B	Trip Blank	2103612-013a	ND	3.0	µg/L	UJ	HT-AN, pH-PR
Chromium, Dissolved	E 200.7	BW-4B	2103612-001D	0.0024	0.0060	mg/L	J	MDLRL
Chromium, Dissolved	E 200.7	MKTF-44	2103612-002E	0.0035	0.0060	mg/L	J	MDLRL
Chromium, Dissolved	E 200.7	MKTF-47	2103612-003E	0.0033	0.0060	mg/L	J	MDLRL
cis-1,2-Dichloroethene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
cis-1,3-Dichloropropene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Cobalt, Dissolved	E 200.7	DUP 3-11-21	2103612-008F	0.0030	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-35	2103612-005G	0.014	0.0060	mg/L	J	ERPD-FD
Cobalt, Total	E 200.7	DUP 3-11-21	2103612-008G	0.0078	0.0060	mg/L	J	ERPD-FD
Cobalt, Total	E 200.7	MKTF-44	2103612-002F	0.0036	0.0060	mg/L	J	MDLRL
Copper, Dissolved	E 200.7	MKTF-35	2103612-005F	0.0054	0.0060	mg/L	J	MDLRL
Dibenzofuran	SW8270C	MKTF-35	2103612-005c	3.1	5.0	µg/L	J	MDLRL
Dibenzofuran	SW8270C	MKTF-18	2103612-006c	3.6	5.0	µg/L	J	MDLRL
Dibenzofuran	SW8270C	DUP 3-11-21	2103612-008c	2.6	5.0	µg/L	J	MDLRL
Dibromochloromethane	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Dibromomethane	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Dichlorodifluoromethane	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Di-n-butylphthalate	SW8270C	MKTF-38	2103612-004c	6.7	10	µg/L	U	MBD, MDLRL
Di-n-butylphthalate	SW8270C	MKTF-35	2103612-005c	6.7	10	µg/L	U	MBD, MDLRL
Di-n-butylphthalate	SW8270C	DUP 3-11-21	2103612-008c	6.5	10	µg/L	U	MBD, MDLRL
Di-n-octylphthalate	SW8270C	MKTF-47	2103612-003c	9.2	10	µg/L	U	MBD, MDLRL
Di-n-octylphthalate	SW8270C	MKTF-38	2103612-004c	9.2	10	µg/L	U	MBD, MDLRL
Di-n-octylphthalate	SW8270C	MKTF-35	2103612-005c	9.2	10	µg/L	U	MBD, MDLRL
Ethylbenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Hexachlorobutadiene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Indeno(1,2,3-cd)pyrene	SW8270C	MKTF-47	2103612-003c	ND	0.30	µg/L	UJ	ERPD-LCS
Indeno(1,2,3-cd)pyrene	SW8270C	MKTF-38	2103612-004c	ND	0.30	µg/L	UJ	ERPD-LCS
Indeno(1,2,3-cd)pyrene	SW8270C	MKTF-35	2103612-005c	ND	0.30	µg/L	UJ	ERPD-LCS
Iron, Dissolved	E 200.7	MKTF-38	2103612-004E	0.012	0.020	mg/L	J	MDLRL
Iron, Total	E 200.7	MKTF-35	2103612-005G	15	2.5	mg/L	J	ERPD-FD
Iron, Total	E 200.7	DUP 3-11-21	2103612-008G	11	1.0	mg/L	J	ERPD-FD
Isopropylbenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Isopropylbenzene	SW8260B	MKTF-21	2103612-012a	0.44	2.0	µg/L	J	MDLRL
Lead, Dissolved	E200.8	BW-4B	2103612-001D	0.000094	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-44	2103612-002E	0.00027	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-38	2103612-004E	0.000038	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-35	2103612-005F	0.00029	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-18	2103612-006F	0.00009	0.00050	mg/L	J	MDLRL
Lead, Dissolved	E200.8	DUP 3-11-21	2103612-008F	0.00027	0.00050	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-35	2103612-005G	0.015	0.0025	mg/L	J	ERPD-FD
Lead, Total	E200.8	DUP 3-11-21	2103612-008G	0.0097	0.00050	mg/L	J	ERPD-FD
Lead, Total	E200.8	MKTF-38	2103612-004F	0.00016	0.00050	mg/L	U	MBD, MDLRL
Magnesium, Dissolved	E 200.7	BW-4B	2103612-001D	0.66	1.0	mg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Magnesium, Dissolved	E 200.7	MKTF-44	2103612-002E	0.51	1.0	mg/L	J	MDLRL
Methylene Chloride	SW8260B	Trip Blank	2103612-013a	ND	3.0	µg/L	UJ	HT-AN, pH-PR
MTBE	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
MTBE	SW8260B	MKTF-38	2103612-004a	0.46	1.0	µg/L	J	MDLRL
Naphthalene	SW8260B	Trip Blank	2103612-013a	ND	2.0	µg/L	UJ	HT-AN, pH-PR
Naphthalene	SW8260B	MKTF-16	2103612-011a	57	200	µg/L	J	MDLRL
Naphthalene	SW8260B	MKTF-18	2103612-006a	16	2.0	µg/L	J	DATA-COMP
Naphthalene	SW8270C	MKTF-18	2103612-006c	8.2	0.10	µg/L	J	DATA-COMP
n-Butylbenzene	SW8260B	Trip Blank	2103612-013a	ND	3.0	µg/L	UJ	HT-AN, pH-PR
n-Butylbenzene	SW8260B	MKTF-35	2103612-005a	3.1	30	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-18	2103612-006a	0.97	3.0	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	DUP 3-11-21	2103612-008a	3.4	30	µg/L	J	MDLRL
Nickel, Dissolved	E 200.7	BW-4B	2103612-001D	0.0053	0.010	mg/L	J	MDLRL
Nickel, Dissolved	E 200.7	MKTF-35	2103612-005F	0.0034	0.010	mg/L	J	MDLRL
Nickel, Dissolved	E 200.7	MKTF-18	2103612-006F	0.0085	0.010	mg/L	J	MDLRL
Nickel, Dissolved	E 200.7	DUP 3-11-21	2103612-008F	0.0041	0.010	mg/L	J	MDLRL
Nickel, Total	E 200.7	BW-4B	2103612-001E	0.018	0.010	mg/L	J+	HR-LCS
Nickel, Total	E 200.7	MKTF-35	2103612-005G	0.014	0.010	mg/L	J+	HR-LCS
Nickel, Total	E 200.7	DUP 3-11-21	2103612-008G	0.012	0.010	mg/L	J+	HR-LCS
Nickel, Total	E 200.7	MKTF-21	2103612-012D	0.031	0.010	mg/L	J+	HR-LCS
Nickel, Total	E 200.7	MKTF-18	2103612-006G	0.0036	0.010	mg/L	J+	HR-LCS, MDLRL
Nitrogen, Nitrate	E300	DUP 3-11-21	2103612-008E	0.12	0.50	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	MKTF-21	2103612-012B	0.12	0.50	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	EB 3-11-21	2103612-007D	0.037	0.10	mg/L	J	MDLRL
n-Propylbenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
n-Propylbenzene	SW8260B	MKTF-16	2103612-011a	30	100	µg/L	J	MDLRL
n-Propylbenzene	SW8260B	MKTF-21	2103612-012a	0.90	2.0	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Phenol	SW8270C	MKTF-35	2103612-005c	41	5.0	µg/L	J	ERPD-FD
Phenol	SW8270C	DUP 3-11-21	2103612-008c	21	5.0	µg/L	J	ERPD-FD
p-Isopropyltoluene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Potassium, Dissolved	E 200.7	MKTF-38	2103612-004E	0.54	1.0	mg/L	J	MDLRL
Potassium, Dissolved	E 200.7	MKTF-35	2103612-005F	0.48	1.0	mg/L	J	MDLRL
Potassium, Dissolved	E 200.7	MKTF-18	2103612-006F	0.41	1.0	mg/L	J	MDLRL
Potassium, Dissolved	E 200.7	DUP 3-11-21	2103612-008F	0.45	1.0	mg/L	J	MDLRL
Pyrene	SW8270C	DUP 3-11-21	2103612-008c	0.16	0.20	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
sec-Butylbenzene	SW8260B	MKTF-18	2103612-006a	0.90	1.0	µg/L	J	MDLRL
Selenium, Total	E200.8	BW-4B	2103612-001E	0.00068	0.0010	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-47	2103612-003E	0.0021	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-38	2103612-004E	0.0031	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-35	2103612-005F	0.0023	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-18	2103612-006F	0.0015	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	DUP 3-11-21	2103612-008F	0.0019	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-47	2103612-003F	0.0030	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-38	2103612-004F	0.0042	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-35	2103612-005G	0.0032	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-18	2103612-006G	0.0016	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	DUP 3-11-21	2103612-008G	0.0031	0.0050	mg/L	J	MDLRL
Styrene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
tert-Butylbenzene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Tetrachloroethene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Tetrachloroethene	SW8260B	MKTF-38	2103612-004a	0.42	1.0	µg/L	J	MDLRL
Toluene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Toluene	SW8260B	DUP 3-11-21	2103612-008a	99	10	µg/L	J	ERPD-MS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Toluene	SW8260B	MKTF-21	2103612-012a	0.41	2.0	µg/L	J	ERPD-MS, MDLRL
TPH GRO	SW8015	MKTF-21	2103612-012a	1.80	0.10	µg/L	J+	HR-SUR
TPH GRO	SW8015	BW-4B	2103612-001a	0.017	0.050	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	MKTF-44	2103612-002a	0.015	0.050	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	MKTF-47	2103612-003a	0.016	0.050	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	MKTF-38	2103612-004a	0.020	0.050	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	Field Blank 3-10-2021	2103612-009a	0.018	0.050	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	Field Blank 3-11-2021	2103612-010a	0.017	0.050	mg/L	U	MBD, MDLRL
trans-1,2-Dichloroethene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
trans-1,3-Dichloropropene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Trichloroethene	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Trichlorofluoromethane	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Vinyl Chloride	SW8260B	Trip Blank	2103612-013a	ND	1.0	µg/L	UJ	HT-AN, pH-PR
Vinyl Chloride	SW8260B	MKTF-16	2103612-011a	40	100	µg/L	J	MDLRL
Xylenes, Total	SW8260B	Trip Blank	2103612-013a	ND	1.5	µg/L	UJ	HT-AN, pH-PR
Zinc, Dissolved	E 200.7	BW-4B	2103612-001D	0.038	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	MKTF-38	2103612-004E	0.012	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	MKTF-35	2103612-005F	0.012	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	MKTF-18	2103612-006F	0.015	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	DUP 3-11-21	2103612-008F	0.014	0.010	mg/L	U	EBD
Zinc, Dissolved	E 200.7	MKTF-44	2103612-002E	0.0088	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	MKTF-47	2103612-003E	0.008	0.010	mg/L	U	EBD, MDLRL
Zinc, Total	E 200.7	MKTF-35	2103612-005G	0.027	0.010	mg/L	J	ERPD-FD
Zinc, Total	E 200.7	DUP 3-11-21	2103612-008G	0.019	0.010	mg/L	J	ERPD-FD

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-002 Task: 0006	Sample Start Date: 06/17/2021
Date Validated: 02/23/2022	Sample End Date: 06/17/2021
Parameters Included: ▪ Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B ▪ 1,2-Dibromoethane (EDB) by EPA Method 504.1 ▪ Semivolatile Organic Compounds (SVOC) by SW-846 Methods 8270C and 8270C with Selective Ion Monitoring (SIM) ▪ Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D ▪ TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified ▪ Total and Dissolved Metals by EPA Methods 200.7 and 200.8 ▪ Total and Dissolved Mercury by EPA Method 245.1 ▪ Anions by EPA Method 300.0	
Laboratory Project ID: 2106976	
Data Validator: Daran O'Hollearn, Lead Project Scientist	
Reviewer: Mike Phillips, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

Tier II Data Validation Report Summary

- Equipment blanks
- Field blanks
- Trip blanks

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
MKTF-2	2106976-001
MKTF-31	2106976-002
MKTF-25	2106976-003
MKTF-40	2106976-004
MKTF-11	2106976-005
EB 6/17/2021	2106976-006
FB 6/17/2021	2106976-007
DUP 6/17/2021	2106976-008
Trip Blank	2106976-009

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ○ Initial and Continuing Calibrations (Items 9 and 10)
- ⊗ Laboratory Blanks (Items 11 and 12)
- ✓ MS/MSD (Items 13 and 14)
- ⊗ LCS/LCSD (Items 15 and 16)
- ⊗ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Equipment, Field, and Trip Blanks (Items 18 and 19)
- ⊗ Field Duplicates (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)
- ✓ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
J-	The result is an estimated concentration, but may be biased low
UJ	Estimated reporting limit
U	Evaluated to be undetected at the reporting limit
JB	Estimated concentration due to blank contamination
R	Rejected, data not usable

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 1,145 data points. The data completeness calculation does not include any submitted blank sample results. Twenty-six data points were rejected. The data completeness measure for this data package is calculated to be 97.73% and is acceptable.

VALIDATION CRITERIA CHECKLIST

1. Was the report free of non-conformances identified by the laboratory? Yes

Comments: The laboratory did not report non-conformances related to the analytical data for this sample set.

2. Were the data free of data qualification flags and/or notes used by the laboratory? No
If no, define.

Comments: The laboratory used the following data qualification flags with this data set.

D – Sample diluted due to matrix.

E – Value above quantitation range. *The application of this laboratory flag to QC sample results in the laboratory report did not require qualification.*

J – Analyte detected below quantitation limits.

R – % RPD outside of range.

S – % Recovery outside of range due to dilution or matrix interference.

* – Value exceeds maximum contaminant level.

3. Were sample CoC forms and custody procedures complete? Yes

Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.

4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable? Yes

Comments: The detection limits appeared to be acceptable. The following dilutions were applied.

Method	Sample(s)	Analyte(s)	Dilution Factor
200.7	Multiple Samples	Select Dissolved and Total Metals	5
200.8	Multiple Samples	Select Dissolved and Total Metals	5
300.0	Multiple Samples	Select Anions	5
8015D	MKTF-2, MKTF-31	TPH GRO	5
8260B	MKTF-2, MKTF-31	VOCs	5
200.7	Multiple Samples	Select Dissolved and Total Metals	10
200.8	MKTF-40	Dissolved Arsenic and Selenium	10
8015D	MKTF-11, MKTF-25, DUP 6/17/2021	TPH GRO	10
8260B	MKTF-11, MKTF-25, DUP 6/17/2021	VOCs	10
8270C SIM	MKTF-11	SVOCs	10
200.7	MKTF-2, MKTF-11, DUP 6/17/2021	Select Total Metals	20
300.0	MKTF-2, MKTF-40, DUP 6/17/2021	Select Anions	20
8270C	MKTF-11	SVOCs	20
8260B	MKTF-2	Benzene	50
300.0	MKTF-31, MKTF-25	Chloride	50
200.7	MKTF-40	Sodium	50
8260B	MKTF-11, DUP 6/17/2021	Benzene	100
300.0	MKTF-11	Chloride	200
300.0	MKTF-2, MKTF-40, DUP 6/17/2021	Chloride	500

VALIDATION CRITERIA CHECKLIST

5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC? Yes

Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.

6. Were samples received in good condition within method-specified requirements? No

Comments: Samples were received on ice, in good condition, and with the cooler temperatures outside the recommended temperature range of 4°C ± 2°C at 7.5°C, 8.2°C, and 11.6°C as noted on the CoC and Sample Log-in Check List.

The cooler temperatures above 6°C were evaluated to be acceptable since the samples were received at the laboratory on the same day (within 24 hours) of the last sample collection time, and temperature equilibrium had not been established.

7. Were samples extracted/digested and analyzed within method-specified or technical holding times? Yes

Comments: The samples were extracted/digested and analyzed within method-specific holding times.

8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil. Yes

Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.

9. Did the laboratory provide any specific initial and/or continuing calibration results? No

Comments: Initial and continuing calibration data were not included as part of this data set.

10. If initial and/or continuing calibration results were provided, were the results within acceptable limits? N/A

Comments: Initial and continuing calibration data were not included as part of this data set.

11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.

12. Were target analytes reported as not detected in the laboratory blanks? No

Comments: Target analytes were reported as not detected in the laboratory blanks, with the following exceptions.

Bis(2-ethylhexyl)phthalate and di-n-octyl phthalate were detected in the laboratory blank for Method 8270C batch 60820 at concentrations of 5.1 µg/L and 6.6 µg/L, respectively. Sample results detected below the blank concentration and/or the laboratory reporting limit were qualified with U flags. Non-detections of these analytes in the associated samples did not require qualification.

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batches. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
200.7	Total Metals	60804	MKTF-31
200.7	Dissolved Metals	B79194	EB 6/17/2021
200.8	Total Metals	60804	MKTF-2

VALIDATION CRITERIA CHECKLIST

Method	Analytes	Batch	MS Sample Source
200.8	Dissolved Selenium	B79406	Not Prepared
200.8	Dissolved Metals	C79234	Not Prepared
200.8	Dissolved Metals	C79314	EB 6/17/2021
200.8	Dissolved Arsenic	C79446	Not Prepared
245.1	Total Mercury	60773	Not Prepared
245.1	Dissolved Mercury	61092	Not Prepared
245.1	Dissolved Mercury	61093	Not Prepared
300.0	Anions	R79216	EB 6/17/2021
300.0	Chloride	R79498	Not Prepared
504.1	EDB	60809	Not Prepared
8015D	DRO and MRO	60769	Not Prepared
8015D	GRO	G79410	MKTF-2
8260B	VOCs	R79410	MKTF-2
8270C SIM	SVOCs	60807	Not Prepared
8270C	SVOCs	60820	Not Prepared
8270C SIM	SVOCs	60889	Not Prepared

Not Prepared – Matrix spikes were not prepared for this batch.

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? Yes

Comments: The percent recoveries and RPDs for MS/MSDs prepared from project samples were within data validation and laboratory QC limits or were not applicable because the unspiked amount was more than four times the spike added.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? No

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits, with the following exceptions.

Method	Analyte	Batch	LCS Recovery	LCSD Recovery	LCS/LCSD QC Limits	LCS/LCSD RPD	RPD QC Limits
200.7	**Total Barium**	**60804**	**63.8%**	**----**	**70-130%**	**----**	**----**
200.8	**Dissolved Selenium**	**B79406**	**65.3%**	**----**	**70-130%**	**----**	**----**
8015D	**TPH DRO**	**60769**	**Acceptable**	**Acceptable**	**21.1-126%**	**21.3%**	**20%**

Total barium and dissolved selenium with LCS percent recoveries that were less than the lower laboratory QC limits were qualified as J- if detected and UJ if not detected in the associated samples due to evidence of potential low bias.

TPH DRO was detected in the associated samples. The TPH DRO results in the associated samples were qualified as J due to evidence of poor precision.

VALIDATION CRITERIA CHECKLIST

17. Were surrogate recoveries within laboratory QC limits? No

Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions.

Method	Surrogate	Sample	Surrogate Recovery	QC Limits
8270C	**2-Fluorophenol**	**MKTF-2**	**0%**	**15-88.8%**
8270C	**Phenol-d_5**	**MKTF-2**	**0%**	**15-71.9%**
8270C	**2,4,6-Tribromophenol**	**MKTF-2**	**0%**	**15-97.4%**
8270C	**2-Fluorophenol**	**DUP 6/17/2021**	**0%**	**15-88.8%**
8270C	**2,4,6-Tribromophenol**	**DUP 6/17/2021**	**3.21%**	**15-97.4%**

Since Method 8270C surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes in a given fraction (acid or base/neutral) when two or more surrogates from the same fraction (acid or base/neutral) were outside the acceptance range. **Due to the surrogates recovering less than 10% in samples MKTF-2 and DUP 6/17/2021, the associated target analytes in the acid fractions that were not detected in samples MKTF-2 and DUP 6/17/2021 were qualified as R indicating rejected results, data not usable. The detected phenol results in samples MKTF-2 and DUP 6/17/2021 were qualified as J- due to these non-conformances.**

Since Method 8270 SIM surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes in a given fraction (acid or base/neutral) when two or more surrogates from the same fraction (acid or base/neutral) were outside the acceptance range. This condition did not exist for the samples MKTF-2, MKTF-25, MKTF-11, and DUP 6/17/2021, and qualification of sample data was not required.

The SVOC results for sample MKTF-11 were not qualified based on the surrogate non-conformances in the Method 8270C analysis since the applied dilution of 20 times resulted in surrogate concentrations below routinely calibrated levels, and those results were deemed unreliable and possibly inaccurate.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. One trip blank sample, Trip Blank, one field blank sample, FB 6/17/2021, and one equipment blank sample, EB 6/17/2021, were collected as part of this sample set.

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
Trip Blank	**8260B**	**Benzene**	**0.36 µg/L**
FB 6/17/2021	**8260B**	**2-Butanone**	**2.2 µg/L**
FB 6/17/2021	**8260B**	**Acetone**	**2.4 µg/L**
FB 6/17/2021	8260B	Benzene	0.30 µg/L
FB 6/17/2021	8260B	Bromodichloromethane	0.21 µg/L
FB 6/17/2021	**8260B**	**Toluene**	**0.26 µg/L**
EB 6/17/2021	**200.7**	**Total Potassium**	**0.16 mg/L**
EB 6/17/2021	200.7	Total Sodium	0.65 mg/L
EB 6/17/2021	**200.7**	**Dissolved Zinc**	**0.0094 mg/L**

VALIDATION CRITERIA CHECKLIST

Blank Sample ID	Method	Analyte	Concentration
EB 6/17/2021	300.0	Chloride	1.60 mg/L
EB 6/17/2021	300.0	Fluoride	0.13 mg/L
EB 6/17/2021	**300.0**	**Nitrate as N**	**0.080 mg/L**
EB 6/17/2021	**8015D**	**TPH DRO**	**0.026 mg/L**
EB 6/17/2021	**8015D**	**TPH GRO**	**0.030 mg/L**
EB 6/17/2021	**8260B**	**1,2,4-Trimethylbenzene**	**0.16 µg/L**
EB 6/17/2021	8260B	2-Butanone	8.3 µg/L
EB 6/17/2021	8260B	Acetone	6.4 µg/L
EB 6/17/2021	8260B	Benzene	0.78 µg/L
EB 6/17/2021	**8260B**	**Ethylbenzene**	**0.25 µg/L**
EB 6/17/2021	8260B	Toluene	0.29 µg/L
EB 6/17/2021	8260B	Total Xylenes	0.80 µg/L
EB 6/17/2021	8270C	Bis(2-ethylhexyl)phthalate	4.6 µg/L
EB 6/17/2021	8270C	Di-n-octylphthalate	6.5 µg/L

Detections of the identified analytes in the associated samples that were less than or equal to the blank results and/or less than the applicable reporting limits were assigned U qualifiers. Detections of the identified analytes in the associated samples that were greater than or equal to the reporting limits but less than 10 times the blank results were assigned JB qualifiers. Non-detections of the identified analytes in the associated samples and detections that were above the reporting limit and greater than ten times the blank concentration did not require qualification.

The bis(2-ethylhexyl)phthalate and di-n-octylphthalate results for the samples in batch 60820 were previously qualified due to laboratory blank contamination; therefore, additional qualification due to the equipment blank contamination was not required.

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample DUP 6/17/2021 was collected as a field duplicate of sample MKTF-2.

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? No

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples, with the following exception.

The RPD value for total aluminum exceeded the data validation limit of 30% at 31.9%, which was evidence of poor precision. The total aluminum results were qualified as J for samples MKTF-2 and DUP 6/17/2021.

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? N/A

Comments: Laboratory duplicate samples were not prepared for this sample set.

VALIDATION CRITERIA CHECKLIST

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? Yes

Comments: Target analytes were not reported by more than one method in this data set, with the following exceptions.

Target analytes 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1-methylnaphthalene, 2-methylnaphthalene, hexachlorobutadiene, and naphthalene were reported by both Method 8260B and Method 8270C. 1,2-Dibromoethane was reported from analyses by both Method 8260B and 504.1. These analytes were reported as not detected by both methods, or one or both results were within 5 times the applicable reporting limit, and qualification of data was not required.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
MKTF-40	Boron	2.0	2.1	0.20 / 0.20	mg/L	4.9%
MKTF-25	Cobalt	0.0033	0.0046	0.0060 / 0.0060	mg/L	32.9% ♦
MKTF-40	Cobalt	0.0024	0.0052	0.0060 / 0.0060	mg/L	73.7% ♦
MKTF-11	Cobalt	0.0072	0.0080	0.0060 / 0.0060	mg/L	10.5% ♦
DUP 6/17/2021	Cobalt	0.0065	0.0075	0.0060 / 0.0060	mg/L	14.3% ♦
MKTF-25	Manganese	2.7	2.8	0.020 / 0.020	mg/L	3.6%
MKTF-11	Manganese	4.8	4.9	0.010 / 0.010	mg/L	2.1%
MKTF-25	Molybdenum	ND	0.0068	0.0080 / 0.0080	mg/L	----- ♦
MKTF-31	Nickel	ND	0.0034	0.010 / 0.010	mg/L	----- ♦
MKTF-40	Nickel	0.0066	0.0070	0.010 / 0.010	mg/L	5.9% ♦
MKTF-25	Selenium	ND	0.00045	0.0010 / 0.0010	mg/L	----- ♦
MKTF-40	Silver	0.0013	0.0014	0.0050 / 0.0050	mg/L	7.4% ♦
MKTF-2	Zinc	ND	0.011	0.010 / 0.010	mg/L	----- ♦
MKTF-31	Zinc	ND	0.0087	0.010 / 0.010	mg/L	----- ♦
MKTF-25	Zinc	ND	0.0084	0.010 / 0.010	mg/L	----- ♦
MKTF-40	Zinc	ND	0.0080	0.010 / 0.010	mg/L	----- ♦
MKTF-11	Zinc	ND	0.0083	0.010 / 0.010	mg/L	----- ♦
EB 6/17/2021	Zinc	ND	0.0094	0.010 / 0.010	mg/L	----- ♦
DUP 6/17/2021	Zinc	ND	0.0086	0.010 / 0.010	mg/L	----- ♦

----- *RPD could not be calculated.*

♦ = *One or both of the detections were less than 2 times the applicable reporting limits, and qualification of data was not required.*

The differences for the corresponding analytical results were within five times the applicable reporting limits and validation action was not required, or the differences between the results were less than 30% indicating that the data were within the measurement uncertainty for the methods and qualification of results was not required based on the analytical inconsistencies.

FIELD DUPLICATE SUMMARY

Client Sample ID: MKTF-2 Field Duplicate Sample ID: DUP 6/17/2021				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Aluminum, Total	**E 200.7**	**0.40 mg/L**	**0.29 mg/L**	**31.9%**
Barium, Dissolved	E 200.7	0.37 mg/L	0.37 mg/L	0.0%
Barium, Total	E 200.7	0.39 mg/L	0.37 mg/L	5.3%
Boron, Dissolved	E 200.7	0.79 mg/L	0.80 mg/L	1.3%
Boron, Total	E 200.7	0.85 mg/L	0.81 mg/L	4.8%
Calcium, Total	E 200.7	640 mg/L	630 mg/L	1.6%
Cobalt, Dissolved	E 200.7	0.0080 mg/L	0.0075 mg/L	6.5% +/-RL
Cobalt, Total	E 200.7	0.0080 mg/L	0.0065 mg/L	20.7% +/-RL
Iron, Dissolved	E 200.7	1.0 mg/L	0.89 mg/L	11.6%
Iron, Total	E 200.7	2.1 mg/L	2.0 mg/L	4.9%
Magnesium, Total	E 200.7	110 mg/L	110 mg/L	0.0%
Manganese, Dissolved	E 200.7	5.4 mg/L	5.3 mg/L	1.9%
Manganese, Total	E 200.7	5.6 mg/L	5.5 mg/L	1.8%
Nickel, Dissolved	E 200.7	0.020 mg/L	0.017 mg/L	16.2% +/-RL
Nickel, Total	E 200.7	0.021 mg/L	0.017 mg/L	21.1%
Potassium, Total	E 200.7	4.7 mg/L	4.3 mg/L	8.9%
Silver, Dissolved	E 200.7	0.0025 mg/L	0.0030 mg/L	18.2% +/-RL
Silver, Total	E 200.7	0.0030 mg/L	0.0032 mg/L	6.5% +/-RL
Sodium, Total	E 200.7	1,400 mg/L	1,400 mg/L	0.0%
Zinc, Dissolved	E 200.7	0.011 mg/L	0.0086 mg/L	24.5% +/-RL
Arsenic, Dissolved	E200.8	0.00088 mg/L	0.0010 mg/L	12.8% +/-RL
Arsenic, Total	E200.8	0.0010 mg/L	0.0014 mg/L	33.3% +/-RL
Lead, Total	E200.8	0.00062 mg/L	0.00044 mg/L	34.0% +/-RL
Bromide	E300	1.3 mg/L	1.4 mg/L	7.4%
Chloride	E300	3,000 mg/L	3,000 mg/L	0.0%
Sulfate	E300	100 mg/L	100 mg/L	0.0%
1,2-Dibromoethane	E504.1	0.0080 µg/L	0.0056 µg/L	35.3% +/-RL
TPH DRO	SW8015	1.8 mg/L	1.5 mg/L	18.2%
TPH GRO	SW8015	5.1 mg/L	5.2 mg/L	1.9%
TPH ORO	SW8015	0.061 mg/L	ND (0.080 mg/L)	DL
1,1,2-Trichloroethane	SW8260B	1.5 µg/L	ND (10 µg/L)	DL
1,1-Dichloroethane	SW8260B	12 µg/L	14 µg/L	15.4%
1,1-Dichloroethene	SW8260B	2.7 µg/L	4.6 µg/L	52.1% +/-RL
1,2,4-Trimethylbenzene	SW8260B	100 µg/L	100 µg/L	0.0%
1,2-Dichloroethane	SW8260B	4.0 µg/L	6.1 µg/L	41.6% +/-RL
1,3,5-Trimethylbenzene	SW8260B	1.6 µg/L	ND (10 µg/L)	DL
1-Methylnaphthalene	SW8260B	27 µg/L	24 µg/L	11.8% +/-RL
2-Butanone	SW8260B	39 µg/L	ND (100 µg/L)	DL

Analyte	Method	Laboratory Result	Duplicate Result	Relative Percent Difference (RPD)
Benzene	SW8260B	1,400 µg/L	1,500 µg/L	6.9%
Chloroethane	SW8260B	3.4 µg/L	ND (20 µg/L)	DL
Chloromethane	SW8260B	3.3 µg/L	ND (30 µg/L)	DL
Ethylbenzene	SW8260B	340 µg/L	330 µg/L	3.0%
Isopropylbenzene	SW8260B	20 µg/L	19 µg/L	5.1%
Methylene Chloride	SW8260B	2.9 µg/L	5.5 µg/L	61.9% +/-RL
MTBE	SW8260B	29 µg/L	34 µg/L	15.9%
Naphthalene	SW8260B	5.4 µg/L	5.7 µg/L	5.4% +/-RL
n-Butylbenzene	SW8260B	4.2 µg/L	4.3 µg/L	2.4% +/-RL
n-Propylbenzene	SW8260B	49 µg/L	49 µg/L	0.0%
p-Isopropyltoluene	SW8260B	1.2 µg/L	ND (10 µg/L)	DL
sec-Butylbenzene	SW8260B	3.4 µg/L	ND (10 µg/L)	DL
Toluene	SW8260B	25 µg/L	24 µg/L	4.1%
Vinyl Chloride	SW8260B	14 µg/L	15 µg/L	6.9%
Xylenes, Total	SW8260B	63 µg/L	62 µg/L	1.6%
1-Methylnaphthalene	SW8270C	15 µg/L	16 µg/L	6.5%
Acenaphthene	SW8270C	0.48 µg/L	0.50 µg/L	4.1%
Bis(2-ethylhexyl)phthalate	SW8270C	5.7 µg/L	5.4 µg/L	5.4% +/-RL
Fluorene	SW8270C	0.48 µg/L	0.48 µg/L	0.0%
Naphthalene	SW8270C	2.5 µg/L	2.9 µg/L	14.8%
Phenanthrene	SW8270C	0.16 µg/L	0.16 µg/L	0.0% +/-RL
Phenol	SW8270C	1.9 µg/L	5.9 µg/L	102.6% +/-RL
Pyrene	SW8270C	0.26 µg/L	0.28 µg/L	7.4% +/-RL

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD value for total aluminum exceeded the data validation limit of 30% at 31.9%, which was evidence of poor precision. The total aluminum results were qualified as J for samples MKTF-2 and DUP 6/17/2021.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
EBD	Equipment blank detection
ERPD-FD	High field duplicate RPD.
ERPD-LCS	The LCS/LCSD RPD exceeded the upper acceptable limit indicating poor precision.
FBD	Field blank detection
LR-LCS	The LCS and/or LCSD percent recovery was less than the lower acceptable limit indicating a possible low bias.
LR-SUR	The surrogate percent recovery was less than the lower acceptable limit indicating a possible low bias.
MBD	Method blank detection
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.
TBD	Trip blank detection

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,1,1-Trichloroethane	SW8260B	MKTF-31	2106976-002a	3.3	5.0	µg/L	J	MDLRL
1,1,2-Trichloroethane	SW8260B	MKTF-2	2106976-001a	1.5	5.0	µg/L	J	MDLRL
1,1,2-Trichloroethane	SW8260B	MKTF-31	2106976-002a	2.6	5.0	µg/L	J	MDLRL
1,1,2-Trichloroethane	SW8260B	MKTF-25	2106976-003a	3.0	10	µg/L	J	MDLRL
1,1-Dichloroethane	SW8260B	MKTF-40	2106976-004a	0.92	1.0	µg/L	J	MDLRL
1,1-Dichloroethene	SW8260B	MKTF-2	2106976-001a	2.7	5.0	µg/L	J	MDLRL
1,1-Dichloroethene	SW8260B	DUP 6/17/2021	2106976-008a	4.6	10	µg/L	J	MDLRL
1,2,4-Trimethylbenzene	SW8260B	MKTF-25	2106976-003a	2.5	10	µg/L	U	EBD, MDLRL
1,2,4-Trimethylbenzene	SW8260B	EB 6/17/2021	2106976-006a	0.16	1.0	µg/L	J	MDLRL
1,2-Dibromoethane	E504.1	MKTF-2	2106976-001B	0.0080	0.0093	µg/L	J	MDLRL
1,2-Dibromoethane	E504.1	MKTF-31	2106976-002B	0.0036	0.0094	µg/L	J	MDLRL
1,2-Dibromoethane	E504.1	DUP 6/17/2021	2106976-008B	0.0056	0.0093	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	MKTF-2	2106976-001a	4.0	5.0	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,2-Dichloroethane	SW8260B	MKTF-40	2106976-004a	0.49	1.0	µg/L	J	MDLRL
1,3,5-Trimethylbenzene	SW8260B	MKTF-2	2106976-001a	1.6	5.0	µg/L	J	MDLRL
1-Methylnaphthalene	SW8260B	MKTF-11	2106976-005a	10	40	µg/L	J	MDLRL
1-Methylnaphthalene	SW8260B	DUP 6/17/2021	2106976-008a	24	40	µg/L	J	MDLRL
2,4,5-Trichlorophenol	SW8270C	MKTF-2	2106976-001d	ND	5.0	µg/L	R	LR-SUR
2,4,5-Trichlorophenol	SW8270C	DUP 6/17/2021	2106976-008d	ND	5.0	µg/L	R	LR-SUR
2,4,6-Trichlorophenol	SW8270C	MKTF-2	2106976-001d	ND	5.0	µg/L	R	LR-SUR
2,4,6-Trichlorophenol	SW8270C	DUP 6/17/2021	2106976-008d	ND	5.0	µg/L	R	LR-SUR
2,4-Dichlorophenol	SW8270C	MKTF-2	2106976-001d	ND	5.0	µg/L	R	LR-SUR
2,4-Dichlorophenol	SW8270C	DUP 6/17/2021	2106976-008d	ND	5.0	µg/L	R	LR-SUR
2,4-Dimethylphenol	SW8270C	MKTF-2	2106976-001d	ND	5.0	µg/L	R	LR-SUR
2,4-Dimethylphenol	SW8270C	DUP 6/17/2021	2106976-008d	ND	5.0	µg/L	R	LR-SUR
2,4-Dimethylphenol	SW8270C	MKTF-11	2106976-005c	48	100	µg/L	J	MDLRL
2,4-Dinitrophenol	SW8270C	MKTF-2	2106976-001d	ND	5.0	µg/L	R	LR-SUR
2,4-Dinitrophenol	SW8270C	DUP 6/17/2021	2106976-008d	ND	5.0	µg/L	R	LR-SUR
2-Butanone	SW8260B	MKTF-2	2106976-001a	39	50	µg/L	U	FBD, MDLRL
2-Butanone	SW8260B	MKTF-31	2106976-002a	17	50	µg/L	U	FBD, MDLRL
2-Butanone	SW8260B	MKTF-40	2106976-004a	1.2	10	µg/L	U	FBD, MDLRL
2-Butanone	SW8260B	MKTF-11	2106976-005a	71	100	µg/L	U	FBD, MDLRL
2-Butanone	SW8260B	EB 6/17/2021	2106976-006a	8.3	10	µg/L	U	FBD, MDLRL
2-Butanone	SW8260B	FB 6/17/2021	2106976-007a	2.2	10	µg/L	J	MDLRL
2-Chlorophenol	SW8270C	MKTF-2	2106976-001d	ND	5.0	µg/L	R	LR-SUR
2-Chlorophenol	SW8270C	DUP 6/17/2021	2106976-008d	ND	5.0	µg/L	R	LR-SUR
2-Methylnaphthalene	SW8260B	MKTF-11	2106976-005a	13	40	µg/L	J	MDLRL
2-Methylphenol	SW8270C	MKTF-2	2106976-001d	ND	5.0	µg/L	R	LR-SUR
2-Methylphenol	SW8270C	DUP 6/17/2021	2106976-008d	ND	5.0	µg/L	R	LR-SUR
2-Methylphenol	SW8270C	MKTF-11	2106976-005c	36	100	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
2-Nitrophenol	SW8270C	MKTF-2	2106976-001d	ND	5.0	µg/L	R	LR-SUR
2-Nitrophenol	SW8270C	DUP 6/17/2021	2106976-008d	ND	5.0	µg/L	R	LR-SUR
3,4-Methylphenol	SW8270C	MKTF-2	2106976-001d	ND	5.0	µg/L	R	LR-SUR
3,4-Methylphenol	SW8270C	DUP 6/17/2021	2106976-008d	ND	5.0	µg/L	R	LR-SUR
4,6-Dinitro-2-methylphenol	SW8270C	MKTF-2	2106976-001d	ND	5.0	µg/L	R	LR-SUR
4,6-Dinitro-2-methylphenol	SW8270C	DUP 6/17/2021	2106976-008d	ND	5.0	µg/L	R	LR-SUR
4-Chloro-3-Methylphenol	SW8270C	MKTF-2	2106976-001d	ND	5.0	µg/L	R	LR-SUR
4-Chloro-3-Methylphenol	SW8270C	DUP 6/17/2021	2106976-008d	ND	5.0	µg/L	R	LR-SUR
4-Methyl-2-Pentanone	SW8260B	MKTF-11	2106976-005a	11	100	µg/L	J	MDLRL
4-Nitrophenol	SW8270C	MKTF-2	2106976-001d	ND	5.0	µg/L	R	LR-SUR
4-Nitrophenol	SW8270C	DUP 6/17/2021	2106976-008d	ND	5.0	µg/L	R	LR-SUR
Acetone	SW8260B	MKTF-40	2106976-004a	3.9	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	EB 6/17/2021	2106976-006a	6.4	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	FB 6/17/2021	2106976-007a	2.4	10	µg/L	J	MDLRL
Aluminum, Total	E 200.7	MKTF-2	2106976-001F	0.40	0.020	mg/L	J	ERPD-FD
Aluminum, Total	E 200.7	DUP 6/17/2021	2106976-008F	0.29	0.020	mg/L	J	ERPD-FD
Arsenic, Dissolved	E200.8	MKTF-2	2106976-001G	0.00088	0.0050	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-31	2106976-002G	0.00058	0.0010	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	DUP 6/17/2021	2106976-008G	0.0010	0.0050	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-2	2106976-001F	0.0010	0.0050	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-31	2106976-002F	0.00074	0.0010	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-40	2106976-004F	0.00095	0.0050	mg/L	J	MDLRL
Arsenic, Total	E200.8	DUP 6/17/2021	2106976-008F	0.0014	0.0050	mg/L	J	MDLRL
Barium, Total	E 200.7	MKTF-2	2106976-001F	0.39	0.0030	mg/L	J-	LR-LCS
Barium, Total	E 200.7	MKTF-31	2106976-002F	0.11	0.0030	mg/L	J-	LR-LCS
Barium, Total	E 200.7	MKTF-25	2106976-003F	0.29	0.0030	mg/L	J-	LR-LCS
Barium, Total	E 200.7	MKTF-40	2106976-004F	0.068	0.0030	mg/L	J-	LR-LCS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Barium, Total	E 200.7	MKTF-11	2106976-005E	4.8	0.015	mg/L	J-	LR-LCS
Barium, Total	E 200.7	DUP 6/17/2021	2106976-008F	0.37	0.0030	mg/L	J-	LR-LCS
Barium, Total	E 200.7	EB 6/17/2021	2106976-006E	ND	0.0030	mg/L	UJ	LR-LCS
Benzene	SW8260B	Trip Blank	2106976-009a	0.36	1.0	µg/L	J	MDLRL
Benzene	SW8260B	MKTF-31	2106976-002a	1.4	5.0	µg/L	U	MDLRL, TBD
Benzene	SW8260B	MKTF-40	2106976-004a	0.37	1.0	µg/L	U	MDLRL, TBD
Benzene	SW8260B	EB 6/17/2021	2106976-006a	0.78	1.0	µg/L	U	MDLRL, TBD
Benzene	SW8260B	FB 6/17/2021	2106976-007a	0.3	1.0	µg/L	U	MDLRL, TBD
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-2	2106976-001d	5.7	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-31	2106976-002d	6.3	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-25	2106976-003d	5.2	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	MKTF-40	2106976-004d	4.9	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	EB 6/17/2021	2106976-006c	4.6	10	µg/L	U	MBD, MDLRL
Bis(2-ethylhexyl)phthalate	SW8270C	DUP 6/17/2021	2106976-008d	5.4	10	µg/L	U	MBD, MDLRL
Bromodichloromethane	SW8260B	FB 6/17/2021	2106976-007a	0.21	1.0	µg/L	J	MDLRL
Carbazole	SW8270C	MKTF-25	2106976-003d	4.2	5.0	µg/L	J	MDLRL
Chloroethane	SW8260B	MKTF-2	2106976-001a	3.4	10	µg/L	J	MDLRL
Chloroethane	SW8260B	MKTF-31	2106976-002a	4.8	10	µg/L	J	MDLRL
Chloromethane	SW8260B	MKTF-2	2106976-001a	3.3	15	µg/L	J	MDLRL
Chloromethane	SW8260B	MKTF-31	2106976-002a	2.1	15	µg/L	J	MDLRL
Chloromethane	SW8260B	MKTF-25	2106976-003a	29	30	µg/L	J	MDLRL
Chloromethane	SW8260B	MKTF-11	2106976-005a	19	30	µg/L	J	MDLRL
cis-1,2-Dichloroethene	SW8260B	MKTF-31	2106976-002a	3.8	5.0	µg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	MKTF-25	2106976-003G	0.0046	0.0060	mg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	MKTF-40	2106976-004G	0.0052	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-31	2106976-002F	0.0027	0.0060	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-25	2106976-003F	0.0033	0.0060	mg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Cobalt, Total	E 200.7	MKTF-40	2106976-004F	0.0024	0.0060	mg/L	J	MDLRL
Di-n-octylphthalate	SW8270C	EB 6/17/2021	2106976-006c	6.5	20	µg/L	U	MBD, MDLRL
Ethylbenzene	SW8260B	MKTF-25	2106976-003a	8.3	10	µg/L	U	EBD, MDLRL
Ethylbenzene	SW8260B	EB 6/17/2021	2106976-006a	0.25	1.0	µg/L	J	MDLRL
Lead, Total	E200.8	MKTF-2	2106976-001F	0.00062	0.0025	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-31	2106976-002F	0.00031	0.0005	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-40	2106976-004F	0.00096	0.0025	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-11	2106976-005E	0.00043	0.0025	mg/L	J	MDLRL
Lead, Total	E200.8	DUP 6/17/2021	2106976-008F	0.00044	0.0025	mg/L	J	MDLRL
Methylene Chloride	SW8260B	MKTF-2	2106976-001a	2.9	15	µg/L	J	MDLRL
Methylene Chloride	SW8260B	MKTF-31	2106976-002a	3.4	15	µg/L	J	MDLRL
Methylene Chloride	SW8260B	MKTF-25	2106976-003a	5.0	30	µg/L	J	MDLRL
Methylene Chloride	SW8260B	MKTF-11	2106976-005a	5.1	30	µg/L	J	MDLRL
Methylene Chloride	SW8260B	DUP 6/17/2021	2106976-008a	5.5	30	µg/L	J	MDLRL
Molybdenum, Dissolved	E 200.7	MKTF-25	2106976-003G	0.0068	0.008	mg/L	J	MDLRL
Naphthalene	SW8260B	MKTF-2	2106976-001a	5.4	10	µg/L	J	MDLRL
Naphthalene	SW8260B	DUP 6/17/2021	2106976-008a	5.7	20	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-2	2106976-001a	4.2	15	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-25	2106976-003a	4.2	30	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-11	2106976-005a	6.4	30	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	DUP 6/17/2021	2106976-008a	4.3	30	µg/L	J	MDLRL
Nickel, Dissolved	E 200.7	MKTF-31	2106976-002G	0.0034	0.010	mg/L	J	MDLRL
Nickel, Dissolved	E 200.7	MKTF-40	2106976-004G	0.0070	0.010	mg/L	J	MDLRL
Nickel, Total	E 200.7	MKTF-40	2106976-004F	0.0066	0.010	mg/L	J	MDLRL
Nitrogen, Nitrate	E300	MKTF-25	2106976-003E	0.25	0.50	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	MKTF-40	2106976-004E	0.20	0.50	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	MKTF-11	2106976-005D	0.14	0.50	mg/L	U	EBD, MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Nitrogen, Nitrate	E300	EB 6/17/2021	2106976-006D	0.08	0.10	mg/L	J	MDLRL
Pentachlorophenol	SW8270C	MKTF-2	2106976-001d	ND	20	µg/L	R	LR-SUR
Pentachlorophenol	SW8270C	DUP 6/17/2021	2106976-008d	ND	20	µg/L	R	LR-SUR
Phenol	SW8270C	DUP 6/17/2021	2106976-008d	5.9	5.0	µg/L	J-	LR-SUR
Phenol	SW8270C	MKTF-2	2106976-001d	1.9	5.0	µg/L	J-	LR-SUR, MDLRL
Phenol	SW8270C	MKTF-11	2106976-005c	96	100	µg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	MKTF-2	2106976-001a	1.2	5.0	µg/L	J	MDLRL
Potassium, Total	E 200.7	MKTF-31	2106976-002F	1.4	1.0	mg/L	JB	EBD
Potassium, Total	E 200.7	MKTF-11	2106976-005E	1.5	1.0	mg/L	JB	EBD
Potassium, Total	E 200.7	EB 6/17/2021	2106976-006E	0.16	1.0	mg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-2	2106976-001a	3.4	5.0	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-11	2106976-005a	6.7	10	µg/L	J	MDLRL
Selenium, Dissolved	E200.8	MKTF-40	2106976-004G	ND	0.010	mg/L	UJ	LR-LCS
Selenium, Dissolved	E200.8	MKTF-31	2106976-002G	0.00044	0.0010	mg/L	J	MDLRL
Selenium, Dissolved	E200.8	MKTF-25	2106976-003G	0.00045	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-31	2106976-002F	0.00047	0.0010	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-40	2106976-004F	0.0019	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-2	2106976-001G	0.0025	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-40	2106976-004G	0.0014	0.0050	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	DUP 6/17/2021	2106976-008G	0.0030	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-2	2106976-001F	0.0030	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-40	2106976-004F	0.0013	0.0050	mg/L	J	MDLRL
Silver, Total	E 200.7	DUP 6/17/2021	2106976-008F	0.0032	0.0050	mg/L	J	MDLRL
Sodium, Total	E 200.7	EB 6/17/2021	2106976-006E	0.65	1.0	mg/L	J	MDLRL
Toluene	SW8260B	MKTF-25	2106976-003a	3.3	10	µg/L	U	FBD, MDLRL
Toluene	SW8260B	EB 6/17/2021	2106976-006a	0.29	1.0	µg/L	U	FBD, MDLRL
Toluene	SW8260B	FB 6/17/2021	2106976-007a	0.26	1.0	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
TPH DRO	SW8015	MKTF-31	2106976-002C	0.20	0.064	mg/L	JB	EBD, ERPD-LCS
TPH DRO	SW8015	MKTF-40	2106976-004C	0.063	0.064	mg/L	U	EBD, ERPD-LCS, MDLRL
TPH DRO	SW8015	MKTF-2	2106976-001C	1.8	0.064	mg/L	J	ERPD-LCS
TPH DRO	SW8015	MKTF-25	2106976-003C	0.54	0.064	mg/L	J	ERPD-LCS
TPH DRO	SW8015	MKTF-11	2106976-005B	1.0	0.064	mg/L	J	ERPD-LCS
TPH DRO	SW8015	DUP 6/17/2021	2106976-008C	1.5	0.064	mg/L	J	ERPD-LCS
TPH DRO	SW8015	EB 6/17/2021	2106976-006B	0.026	0.064	mg/L	J	ERPD-LCS, MDLRL
TPH GRO	SW8015	MKTF-31	2106976-002a	0.23	0.25	mg/L	U	EBD, MDLRL
TPH GRO	SW8015	MKTF-40	2106976-004a	0.029	0.050	mg/L	U	EBD, MDLRL
TPH GRO	SW8015	EB 6/17/2021	2106976-006a	0.030	0.050	mg/L	J	MDLRL
TPH ORO	SW8015	MKTF-2	2106976-001C	0.061	0.080	mg/L	J	MDLRL
Xylenes, Total	SW8260B	EB 6/17/2021	2106976-006a	0.80	1.5	µg/L	J	MDLRL
Zinc, Dissolved	E 200.7	MKTF-2	2106976-001G	0.011	0.010	mg/L	JB	EBD
Zinc, Dissolved	E 200.7	MKTF-31	2106976-002G	0.0087	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	MKTF-25	2106976-003G	0.0084	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	MKTF-40	2106976-004G	0.0080	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	MKTF-11	2106976-005F	0.0083	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	DUP 6/17/2021	2106976-008G	0.0086	0.010	mg/L	U	EBD, MDLRL
Zinc, Dissolved	E 200.7	EB 6/17/2021	2106976-006F	0.0094	0.010	mg/L	J	MDLRL

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, Quarterly GW	Sample Matrix: Groundwater
Project Number: 697-080-001 Task 0016	Sample Start Date: 09/15/2021
Date Validated: 12/09/2021	Sample End Date: 09/15/2021
Parameters Included: ▪ Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B ▪ 1,2-Dibromoethane (EDB) by EPA Method 504.1 ▪ Semivolatile Organic Compounds (SVOC) by SW-846 Methods 8270C and 8270C with Selective Ion Monitoring (SIM) ▪ Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D ▪ TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified ▪ Total and Dissolved Metals by EPA Methods 200.7 and 200.8 ▪ Total and Dissolved Mercury by EPA Method 245.1 ▪ Anions by EPA Method 300.0	
Laboratory Project ID: 2109786	
Data Validator: Kyle Power, Environmental Chemist	
Reviewer: Charles Ballek, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Tier II Data Validation Report Summary

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Trip blanks
- Field blank
- Equipment blank

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
EB-09-15-21	2109786-001
MKTF-10	2109786-002
MKTF-11	2109786-003
MKTF-27	2109786-004
MKTF-28	2109786-005
MKTF-29	2109786-006
MKTF-30	2109786-007
FB-09-15-21	2109786-008
DUP-09-15-21	2109786-009
Trip Blank	2109786-010
Trip Blank-2	2109786-011

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ○ Initial and Continuing Calibrations (Items 9 and 10)
- ⊗ Laboratory Blanks (Items 11 and 12)
- ✓ MS/MSD (Items 13 and 14)
- ✓ LCS/LCSD (Items 15 and 16)
- ✓ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ⊗ Field, Equipment, and Trip Blanks (Items 18 and 19)
- ⊗ Field Duplicate (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)
- ⊗ Data Relationships (Item 23)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-540-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, February 2021.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
UJ	Estimated reporting limit
U	Evaluated to be undetected at the reporting limit
JB	Estimated concentration due to blank contamination

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 1,329 data points. The data completeness calculation does not include any submitted blank sample results. Data points were not rejected. The data completeness measure for this data package is calculated to be 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST	
1. Was the report free of non-conformances identified by the laboratory?	Yes
Comments: The laboratory did not identify non-conformances regarding the analytical data.	
2. Were the data free of data qualification flags and/or notes used by the laboratory? If no, define.	No
Comments: The laboratory used the following data qualification flags with this data set. D – Sample diluted due to matrix J – Analyte detected below quantitation limits S – % Recovery outside of range due to dilution or matrix * – Value exceeds Maximum Contaminant Level	
3. Were sample CoC forms and custody procedures complete?	Yes
Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present or required since the samples were delivered to the laboratory by courier, and custody was maintained at all times.	
4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable?	Yes
Comments: The detection limits appeared to be acceptable. The following dilutions were applied. Method 8260B: Dilutions of 10 and 100 times were applied for the VOC analysis of samples MKTF-10 and MKTF-11. Method 8270C: Dilutions of 10 times were applied for the SVOC analyses of samples MKTF-10 and MKTF-11. Method 8270C SIM: A dilution of 10 times was applied for the analysis of anthracene in sample MKTF-10. Method 8015D (GRO): Dilutions of 10 times were applied for the TPH GRO analysis of samples MKTF-10 and MKTF-11. Method 200.7: Dilutions of 5 to 20 times were applied for the metals analyses of select samples. Method 300.0: Dilutions of 5 to 200 times were applied for the analyses of anions for the samples.	
5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC?	Yes
Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.	
6. Were samples received in good condition within method-specified requirements?	No
Comments: Samples were received on ice, in good condition, and with the cooler temperatures outside the recommended temperature range of 4°C ± 2°C between 10.2°C and 11.9°C as noted on the *Sample Log-in Check List*. The cooler temperatures above 6°C were evaluated to be acceptable since the samples were received at the laboratory on the same day (within 24 hours) of the last sample collection time, and temperature equilibrium had not been established.	
7. Were samples extracted/digested and analyzed within method-specified or technical holding times?	Yes
Comments: The samples were extracted/digested and/or analyzed within method-specific holding times.	
8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil.	Yes
Comments: The results were reported in concentration units of micrograms per liter (µg/L) and milligrams per liter (mg/L), which were acceptable for the sample matrix and the analyses requested.	
9. Did the laboratory provide any specific initial and/or continuing calibration results?	No
Comments: Initial and continuing calibration data were not included as part of this data set.	

VALIDATION CRITERIA CHECKLIST

10. If initial and/or continuing calibration results were provided, were the results within acceptable limits? N/A

Comments: Initial and continuing calibration data were not included as part of this data set.

11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.

12. Were target analytes reported as not detected in the laboratory blanks? No

Comments: Target analytes were reported as not detected in the laboratory blanks, with the following exceptions.

Method 8015D (DRO/MRO): **Analyte TPH DRO was detected in the method blank sample from batch 62658 at 0.034 mg/L. Detections of TPH DRO in the associated samples that were less the reporting limits were qualified as U. Results greater than the blank detection but less than or equal to 10 times the blank concentration were qualified as JB.** Results of TPH DRO in the associated samples greater than 10 times the blank detection did not require qualification.

Method 200.8: Dissolved iron was detected in the method blank for batch B81329 at a concentration of 0.014 mg/L. Qualification of sample results was not required as dissolved iron was not detected in the associated samples.

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batch. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
200.7	Dissolved Metals	A81359	Not Prepared
200.7	Total Metals	62771	Not Prepared
200.7	Dissolved Metals	B81329	Not Prepared
200.7	Dissolved Metals	B81434	Not Prepared
200.8	Total Metals	62771	MKTF-41
200.8	Dissolved Metals	B81374	Not Prepared
200.8	Dissolved Metals	C81396	Not Prepared
245.1	Mercury	62684	Not Prepared
300.0	Anions	R81351	MKTF-10
300.0	Chloride	A81455	Not Prepared
504.1	EDB	62680	Not Prepared
8015D	TPH DRO and MRO	62658	Not Prepared
8260B	VOC	R81355	Not Prepared
8260B	VOC	R81384	Not Prepared
8260B	VOC	R81542	Not Prepared
8270C	SVOC	62647	Not Prepared
8270C SIM	SVOC	62617	Not Prepared
8015D	GRO	R81355	Not Prepared
8015D	GRO	R81384	Not Prepared
8015D	GRO	R81542	Not Prepared

Not Prepared – Matrix spikes were not prepared/reported for this batch.

VALIDATION CRITERIA CHECKLIST	
14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits?	Yes
Comments: The MS/MSD percent recoveries and RPDs for project samples were within data validation and laboratory QC limits.	
15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method?	Yes
Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.	
16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits?	Yes
Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within laboratory QC limits.	
17. Were surrogate recoveries within laboratory QC limits?	No
Comments: Surrogate recoveries were within laboratory QC limits or were not applicable because the surrogate was diluted out, with the following exceptions. Method 8270C: The surrogate recoveries for 2-fluorophenol from samples MKTF-10 and MKTF-11 were outside laboratory QC limits of 15-87% both at 0%. Qualification of sample results was not required based on the 2-fluorophenol recovery as two out of the three surrogates for Method 8270C for samples MKTF-10 and MKTF-11 were within laboratory QC limits. Method 8270C SIM: The surrogate recovery for 4-terphenyl-d_{14} from sample EB-09-15-21 was outside laboratory QC limits of 73.1-152% at 65.5%. Qualification of sample results was not required based on the 4-terphenyl-d_{14} recovery as three out of the four surrogates for Method 8270 SIM for sample EB-09-15-21 were within laboratory QC limits.	
18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit?	Yes
Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples. Two trip blank samples, Trip Blank and Trip Blank-2, one field blank sample, FB-09-15-21, and one equipment blank sample, EB-09-15-21, were collected as part of this sample set.	

VALIDATION CRITERIA CHECKLIST

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? No

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the exceptions listed in the following table.

Blank Sample ID	Method	Analyte	Concentration
EB-09-15-21	8260B	Acetone	3.5 µg/L
EB-09-15-21	8260B	Styrene	0.15 µg/L
EB-09-15-21	8015D	TPH DRO	0.063 mg/L
EB-09-15-21	8270C	Benzyl Alcohol	3.8 µg/L
EB-09-15-21	**300.0**	**Nitrate**	**0.055 mg/L**
EB-09-15-21	200.7	Beryllium, Dissolved	0.0016 mg/L
EB-09-15-21	**200.7**	**Zinc, Dissolved**	**0.0078 mg/L**
FB-09-15-21	**8260B**	**2-Butanone**	**2.4 µg/L**
FB-09-15-21	**8260B**	**Acetone**	**3.9 µg/L**

Detections of nitrate, dissolved zinc, 2-butanone, and acetone in the associated samples that were less than the reporting limits were qualified as U. Dissolved zinc results that were greater than the blank detection but less than 10 times the blank concentration were qualified as JB.

Non-detections of the identified analytes in the associated samples and results greater than 10 times the blank detections did not require qualification.

Qualification was not required for TPH DRO as it was previously qualified for method blank contamination.

20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. Sample DUP-09-15-21 was collected as a field duplicate of sample MKTF-27.

21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? No

Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples, with the following exceptions.

The RPD value for dissolved zinc greatly exceeded the data validation QC limit for samples MKTF-27 and DUP-09-15-21 at 109.7%. Dissolved zinc was qualified as J and UJ for the associated samples due to evidence of extreme poor precision (RPD greater than 100%).

The RPD values for several analytes exceeded the data validation QC limit of 30%, which was evidence of poor precision. The affected analytes were qualified as J for samples MKTF-27 and DUP-09-15-21.

22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits? N/A

Comments: Laboratory duplicate samples were not prepared/reported for this sample set.

VALIDATION CRITERIA CHECKLIST

23. Were the following data relationships realistic and acceptable?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270), and the results were in agreement? Yes

Comments: Target analytes were not reported by more than one method in this data set, with the following exceptions.

Target analytes 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1-methylnaphthalene, 2-methylnaphthalene, hexachlorobutadiene, and naphthalene were reported by both Method 8260B and Method 8270D. 1,2-Dibromoethane was reported by both Method 504.1 and 8260B. These analytes were reported as not detected by both methods, with the following exceptions.

Sample	Analyte	Method 8260B (µg/L)	Method 8270D (µg/L)	Difference (µg/L)	Reporting Limits (µg/L) 8260B/8270D	RPD
MKTF-10	1-Methylnaphthalene	62	42	20	40 / 1	38.5% ◄
MKTF-11	1-Methylnaphthalene	12	6.2	5.8	40 / 1	63.7% ◄
MKTF-10	**2-Methylnaphthalene**	**110**	**68**	**42**	**40 / 1**	**47.2%**
MKTF-11	2-Methylnaphthalene	16	8	8	40 / 1	66.7% ◄
MKTF-10	**Naphthalene**	**180**	**110**	**70**	**20 / 1**	**48.3%**
MKTF-11	**Naphthalene**	**46**	**21**	**25**	**20 / 1**	**74.6%**

◄ = *One or both results were within 2 times the applicable reporting limits and qualification of data was not required.*

The analytical results for target analytes from both Method 8260B and Method 8270D were within the RPD limit of 30% indicating that the results were comparable, and qualification of the data was not required, with the exceptions listed above. **These results were qualified as J to indicate estimated concentrations due to poor precision.**

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? No

Comments: The total metals concentrations were greater than or equal to the dissolved fractions, with the following exceptions.

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
MKTF-11	Antimony	ND	0.0010	0.0010	mg/L	----- ♦
MKTF-30	Antimony	ND	0.00047	0.0010	mg/L	----- ♦
MKTF-11	Barium	4.9	5.1	0.020	mg/L	4.0%
EB-09-15-21	Beryllium	ND	0.0016	0.0020	mg/L	----- ♦
DUP-09-15-21	Cobalt	0.0026	0.0039	0.0060	mg/L	40.0% ♦
MKTF-27	Cobalt	0.0028	0.0030	0.0060	mg/L	6.9% ♦
MKTF-28	Cobalt	0.0042	0.0057	0.0060	mg/L	30.3% ♦
MKTF-29	Cobalt	0.0055	0.0062	0.0060	mg/L	12.0% ♦
MKTF-30	Cobalt	0.0031	0.0038	0.0060	mg/L	20.3% ♦
MKTF-29	Manganese	4.7	4.8	0.020	mg/L	2.1%
DUP-09-15-21	Molybdenum	ND	0.0060	0.0080	mg/L	----- ♦
MKTF-11	Molybdenum	0.013	0.015	0.0080	mg/L	14.3% ♦
MKTF-27	Molybdenum	ND	0.0060	0.0080	mg/L	----- ♦
DUP-09-15-21	**Zinc**	**ND**	**0.048**	**0.010**	**mg/L**	**-----**
EB-09-15-21	Zinc	ND	0.0078	0.010	mg/L	----- ♦

VALIDATION CRITERIA CHECKLIST

Sample ID	Analyte	Total Result	Dissolved Result	Reporting Limit	Units	RPD
MKTF-11	Zinc	ND	0.0070	0.010	mg/L	----- ♦
MKTF-27	Zinc	ND	0.014	0.010	mg/L	----- ♦
MKTF-28	Zinc	ND	0.014	0.010	mg/L	----- ♦
MKTF-29	Zinc	ND	0.0077	0.010	mg/L	----- ♦
MKTF-30	**Zinc**	**0.0074**	**0.038**	**0.010**	**mg/L**	**134.8%**

♦ = *Both of the detections were less than 2 times the applicable reporting limits and qualification of data was not required.*

The analytical results greater than 2 times the applicable RLs for total and dissolved metals fractions were within the RPD limit of 30% indicating that the results were comparable, and qualification of the data was not required, with the exceptions noted above. **The results for total and dissolved zinc in sample MKTF-30 were qualified as J due to poor precision.**

An RPD value could not be calculated for total and dissolved zinc because the total fraction was not detected in sample DUP-09-15-21. As the detection of dissolved zinc was greater than two times the reporting limits in the identified sample, the dissolved and total zinc results were qualified as J and UJ, respectively.

FIELD DUPLICATE SUMMARY

Client Sample ID: MKTF-27 Field Duplicate Sample ID: DUP-09-15-21				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
1,1-Dichloroethane	8260B	ND (1.0 µg/L)	1.3 µg/L	DL
1,1-Dichloroethene	8260B	ND (1.0 µg/L)	0.32 µg/L	DL
1,2-Dichloroethane	8260B	ND (1.0 µg/L)	0.42 µg/L	DL
Acetone	8260B	9.8 µg/L	2.7 µg/L	113.6% +/-RL
Chloromethane	8260B	0.42 µg/L	ND (3.0 µg/L)	DL
MTBE	**8260B**	**5.2 µg/L**	**14 µg/L**	**91.7%**
1,4-Dioxane	**8270C SIM**	**2.8 µg/L**	**4.2 µg/L**	**40.0%**
Pyrene	8270C SIM	0.16 µg/L	ND (0.20 µg/L)	DL
TPH DRO	8015D	0.15 mg/L	0.15 mg/L	0.0%
TPH ORO	8015D	0.093 mg/L	0.056 mg/L	49.7% +/-RL
Aluminum, Total	**200.7**	**0.86 mg/L**	**0.62 mg/L**	**32.4%**
Barium, Dissolved	200.7	0.067 mg/L	0.067 mg/L	0.0%
Barium, Total	200.7	0.068 mg/L	0.070 mg/L	2.9%
Boron, Dissolved	200.7	0.59 mg/L	0.60 mg/L	1.7%
Boron, Total	200.7	0.60 mg/L	0.60 mg/L	0.0%
Calcium, Total	200.7	150 mg/L	160 mg/L	6.5%
Cobalt, Dissolved	200.7	0.0030 mg/L	0.0039 mg/L	26.1% +/-RL
Cobalt, Total	200.7	0.0028 mg/L	0.0026 mg/L	7.4% +/-RL
Iron, Total	**200.7**	**0.41 mg/L**	**0.26 mg/L**	**44.8%**
Magnesium, Total	200.7	28 mg/L	28 mg/L	0.0%
Manganese, Dissolved	200.7	0.018 mg/L	0.02 mg/L	10.5%
Manganese, Total	**200.7**	**0.10 mg/L**	**0.043 mg/L**	**79.7%**
Molybdenum, Dissolved	200.7	0.0060 mg/L	0.0060 mg/L	0.0% +/-RL
Nickel, Dissolved	200.7	0.027 mg/L	0.030 mg/L	10.5%
Nickel, Total	200.7	0.030 mg/L	0.030 mg/L	0.0%
Potassium, Total	200.7	11 mg/L	11 mg/L	0.0%
Sodium, Total	200.7	1,600 mg/L	1,600 mg/L	0.0%
Zinc, Dissolved	**200.7**	**0.014 mg/L**	**0.048 mg/L**	**109.7%**
Arsenic, Dissolved	200.8	0.00052 mg/L	0.00045 mg/L	14.4% +/-RL
Arsenic, Total	200.8	0.00072 mg/L	0.00057 mg/L	23.3% +/-RL
Copper, Dissolved	200.8	0.0027 mg/L	0.0027 mg/L	0.0%
Copper, Total	200.8	0.0030 mg/L	0.0032 mg/L	6.5%
Lead, Dissolved	200.8	ND (0.00050 mg/L)	0.000063 mg/L	DL
Lead, Total	200.8	0.00044 mg/L	0.00026 mg/L	51.4% +/-RL
Selenium, Dissolved	200.8	0.00056 mg/L	0.00081 mg/L	36.5% +/-RL
Selenium, Total	200.8	0.0014 mg/L	0.0014 mg/L	0.0% +/-RL
Chloride	300.0	2,400 mg/L	2,500 mg/L	4.1%
Fluoride, Total	300.0	1.7 mg/L	1.6 mg/L	6.1%

Client Sample ID: MKTF-27 Field Duplicate Sample ID: DUP-09-15-21				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Nitrogen, Nitrate	300.0	0.31 mg/L	0.32 mg/L	3.2% +/-RL
Sulfate	300.0	150 mg/L	150 mg/L	0.0%

Field duplicate RPD control limits are not to exceed 30% for water as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD value for dissolved zinc greatly exceeded the data validation QC limit and the results were qualified as J and UJ for the associated samples due to evidence of extremely poor precision (RPD greater than 100%).

The RPD values for several analytes exceeded the data validation QC limit and were qualified as J for samples MKTF-27 and DUP-09-15-21 due to evidence of poor precision.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
MBD	Method blank detection
FBD	Field blank detection
EBD	Equipment blank detection
ERPD-FD	High field duplicate RPD.
DATA-COMP	Analytical results for analyte by different methods did not meet comparability limits.
DIS-TOT	Dissolved metals concentration was greater than the associated total metals result
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,1-Dichloroethane	SW8260B	MKTF-29	2109786-006a	0.65	1	µg/L	J	MDLRL
1,1-Dichloroethene	SW8260B	DUP-09-15-21	2109786-009a	0.32	1	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	MKTF-11	2109786-003a	3	10	µg/L	J	MDLRL
1,2-Dichloroethane	SW8260B	DUP-09-15-21	2109786-009a	0.42	1	µg/L	J	MDLRL
1,4-Dioxane	SW8270C	MKTF-27	2109786-004d	2.8	1	µg/L	J	ERPD-FD
1,4-Dioxane	SW8270C	DUP-09-15-21	2109786-009d	4.2	1	µg/L	J	ERPD-FD
1,4-Dioxane	SW8270C	MKTF-11	2109786-003d	5	10	µg/L	J	MDLRL
1,4-Dioxane	SW8270C	MKTF-28	2109786-005d	0.22	1	µg/L	J	MDLRL
1-Methylnaphthalene	SW8260B	MKTF-11	2109786-003a	12	40	µg/L	J	MDLRL
2-Butanone	SW8260B	MKTF-10	2109786-002a	21	100	µg/L	U	FBD, MDLRL
2-Butanone	SW8260B	MKTF-11	2109786-003a	24	100	µg/L	U	FBD, MDLRL
2-Butanone	SW8260B	MKTF-28	2109786-005a	2.3	10	µg/L	U	FBD, MDLRL
2-Butanone	SW8260B	FB-09-15-21	2109786-008a	2.4	10	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	MKTF-11	2109786-003a	16	40	µg/L	J	MDLRL
2-Methylnaphthalene	SW8260B	MKTF-10	2109786-002a	110	40	µg/L	J	DATA-COMP

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
2-Methylnaphthalene	SW8270C	MKTF-10	2109786-002d	68	1	µg/L	J	DATA-COMP
2-Methylphenol	SW8270C	MKTF-10	2109786-002d	4.8	5	µg/L	J	MDLRL
Acetone	SW8260B	EB-09-15-21	2109786-001a	3.5	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	MKTF-10	2109786-002a	26	100	µg/L	U	FBD, MDLRL
Acetone	SW8260B	MKTF-11	2109786-003a	27	100	µg/L	U	FBD, MDLRL
Acetone	SW8260B	MKTF-27	2109786-004a	9.8	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	MKTF-30	2109786-007a	2.6	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	DUP-09-15-21	2109786-009a	2.7	10	µg/L	U	FBD, MDLRL
Acetone	SW8260B	FB-09-15-21	2109786-008a	3.9	10	µg/L	J	MDLRL
Aluminum, Total	E 200.7	MKTF-27	2109786-004F	0.86	0.02	mg/L	J	ERPD-FD
Aluminum, Total	E 200.7	DUP-09-15-21	2109786-009F	0.62	0.02	mg/L	J	ERPD-FD
Anthracene	SW8270C	MKTF-10	2109786-002d	1.7	5	µg/L	J	MDLRL
Antimony, Dissolved	E200.8	MKTF-30	2109786-007G	0.00047	0.001	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-27	2109786-004G	0.00052	0.001	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-29	2109786-006G	0.00083	0.001	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	MKTF-30	2109786-007G	0.0005	0.001	mg/L	J	MDLRL
Arsenic, Dissolved	E200.8	DUP-09-15-21	2109786-009G	0.00045	0.001	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-27	2109786-004F	0.00072	0.001	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-29	2109786-006F	0.00095	0.001	mg/L	J	MDLRL
Arsenic, Total	E200.8	MKTF-30	2109786-007F	0.00082	0.001	mg/L	J	MDLRL
Arsenic, Total	E200.8	DUP-09-15-21	2109786-009F	0.00057	0.001	mg/L	J	MDLRL
Benzyl Alcohol	SW8270C	EB-09-15-21	2109786-001D	3.8	5	µg/L	J	MDLRL
Beryllium, Dissolved	E 200.7	EB-09-15-21	2109786-001G	0.0016	0.002	mg/L	J	MDLRL
Carbazole	SW8270C	MKTF-11	2109786-003d	4.2	5	µg/L	J	MDLRL
Chloroform	SW8260B	MKTF-10	2109786-002a	4.6	10	µg/L	J	MDLRL
Chloroform	SW8260B	MKTF-11	2109786-003a	2.6	10	µg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Chloromethane	SW8260B	MKTF-27	2109786-004a	0.42	3	µg/L	J	MDLRL
Chloromethane	SW8260B	MKTF-28	2109786-005a	0.49	3	µg/L	J	MDLRL
cis-1,2-Dichloroethene	SW8260B	MKTF-10	2109786-002a	9.3	10	µg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	MKTF-10	2109786-002G	0.0032	0.006	mg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	MKTF-11	2109786-003G	0.0052	0.006	mg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	MKTF-27	2109786-004G	0.003	0.006	mg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	MKTF-28	2109786-005G	0.0057	0.006	mg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	MKTF-30	2109786-007G	0.0038	0.006	mg/L	J	MDLRL
Cobalt, Dissolved	E 200.7	DUP-09-15-21	2109786-009G	0.0039	0.006	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-10	2109786-002F	0.0034	0.006	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-27	2109786-004F	0.0028	0.006	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-28	2109786-005F	0.0042	0.006	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-29	2109786-006F	0.0055	0.006	mg/L	J	MDLRL
Cobalt, Total	E 200.7	MKTF-30	2109786-007F	0.0031	0.006	mg/L	J	MDLRL
Cobalt, Total	E 200.7	DUP-09-15-21	2109786-009F	0.0026	0.006	mg/L	J	MDLRL
Copper, Dissolved	E 200.7	DUP-09-15-21	2109786-009G	0.0048	0.006	mg/L	J	MDLRL
Dibenzofuran	SW8270C	MKTF-10	2109786-002d	2.2	5	µg/L	J	MDLRL
Dibenzofuran	SW8270C	MKTF-11	2109786-003d	1.7	5	µg/L	J	MDLRL
Fluoride, Total	E300	MKTF-11	2109786-003E	0.25	0.5	mg/L	J	MDLRL
Iron, Total	E 200.7	MKTF-27	2109786-004F	0.41	0.05	mg/L	J	ERPD-FD
Iron, Total	E 200.7	DUP-09-15-21	2109786-009F	0.26	0.05	mg/L	J	ERPD-FD
Lead, Dissolved	E200.8	MKTF-29	2109786-006G	0.000098	0.0005	mg/L	J	MDLRL
Lead, Dissolved	E200.8	MKTF-30	2109786-007G	0.000062	0.0005	mg/L	J	MDLRL
Lead, Dissolved	E200.8	DUP-09-15-21	2109786-009G	0.000063	0.0005	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-11	2109786-003F	0.00019	0.0005	mg/L	J	MDLRL
Lead, Total	E200.8	MKTF-27	2109786-004F	0.00044	0.0005	mg/L	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Lead, Total	E200.8	MKTF-29	2109786-006F	0.00022	0.0005	mg/L	J	MDLRL
Lead, Total	E200.8	DUP-09-15-21	2109786-009F	0.00026	0.0005	mg/L	J	MDLRL
Manganese, Total	E 200.7	MKTF-27	2109786-004F	0.1	0.002	mg/L	J	ERPD-FD
Manganese, Total	E 200.7	DUP-09-15-21	2109786-009F	0.043	0.002	mg/L	J	ERPD-FD
Molybdenum, Dissolved	E 200.7	MKTF-27	2109786-004G	0.006	0.008	mg/L	J	MDLRL
Molybdenum, Dissolved	E 200.7	DUP-09-15-21	2109786-009G	0.006	0.008	mg/L	J	MDLRL
MTBE	SW8260B	MKTF-27	2109786-004a	5.2	1	µg/L	J	ERPD-FD
MTBE	SW8260B	DUP-09-15-21	2109786-009a	14	1	µg/L	J	ERPD-FD
MTBE	SW8260B	MKTF-10	2109786-002a	5.8	10	µg/L	J	MDLRL
Naphthalene	SW8260B	MKTF-10	2109786-002a	180	20	µg/L	J	DATA-COMP
Naphthalene	SW8270C	MKTF-10	2109786-002d	110	1	µg/L	J	DATA-COMP
Naphthalene	SW8260B	MKTF-11	2109786-003a	46	20	µg/L	J	DATA-COMP
Naphthalene	SW8270C	MKTF-11	2109786-003d	21	1	µg/L	J	DATA-COMP
n-Butylbenzene	SW8260B	MKTF-10	2109786-002a	12	30	µg/L	J	MDLRL
n-Butylbenzene	SW8260B	MKTF-11	2109786-003a	4	30	µg/L	J	MDLRL
Nickel, Dissolved	E 200.7	MKTF-28	2109786-005G	0.0041	0.01	mg/L	J	MDLRL
Nickel, Total	E 200.7	MKTF-28	2109786-005F	0.0057	0.01	mg/L	J	MDLRL
Nitrogen, Nitrate	E300	MKTF-27	2109786-004E	0.31	0.5	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	MKTF-28	2109786-005E	0.41	0.5	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	MKTF-29	2109786-006E	0.19	0.5	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	MKTF-30	2109786-007E	0.14	0.5	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	DUP-09-15-21	2109786-009E	0.32	0.5	mg/L	U	EBD, MDLRL
Nitrogen, Nitrate	E300	EB-09-15-21	2109786-001E	0.055	0.1	mg/L	J	MDLRL
p-Isopropyltoluene	SW8260B	MKTF-10	2109786-002a	7.2	10	µg/L	J	MDLRL
Potassium, Total	E 200.7	MKTF-29	2109786-006F	0.76	1	mg/L	J	MDLRL
Pyrene	SW8270C	MKTF-27	2109786-004d	0.16	0.2	µg/L	J	MDLRL

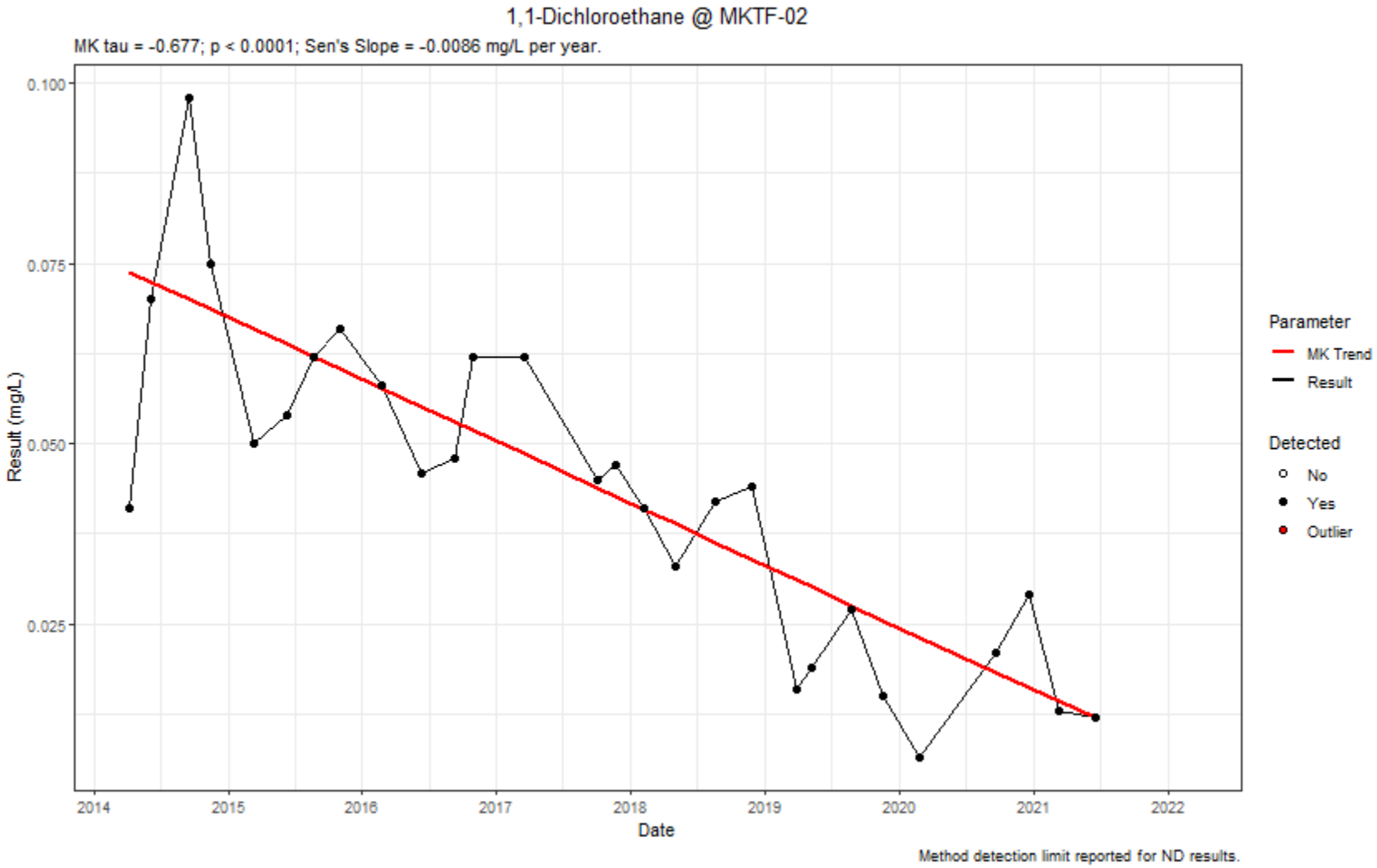
Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Pyrene	SW8270C	MKTF-29	2109786-006d	0.16	0.2	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-10	2109786-002a	5.9	10	µg/L	J	MDLRL
sec-Butylbenzene	SW8260B	MKTF-11	2109786-003a	4.2	10	µg/L	J	MDLRL
Selenium, Dissolved	E200.8	MKTF-27	2109786-004G	0.00056	0.001	mg/L	J	MDLRL
Selenium, Dissolved	E200.8	MKTF-28	2109786-005G	0.00052	0.001	mg/L	J	MDLRL
Selenium, Dissolved	E200.8	MKTF-29	2109786-006G	0.00084	0.001	mg/L	J	MDLRL
Selenium, Dissolved	E200.8	MKTF-30	2109786-007G	0.00051	0.001	mg/L	J	MDLRL
Selenium, Dissolved	E200.8	DUP-09-15-21	2109786-009G	0.00081	0.001	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-11	2109786-003F	0.00071	0.001	mg/L	J	MDLRL
Selenium, Total	E200.8	MKTF-29	2109786-006F	0.00085	0.001	mg/L	J	MDLRL
Silver, Dissolved	E 200.7	MKTF-29	2109786-006G	0.0013	0.005	mg/L	J	MDLRL
Silver, Total	E 200.7	MKTF-29	2109786-006F	0.0015	0.005	mg/L	J	MDLRL
Styrene	SW8260B	EB-09-15-21	2109786-001a	0.15	1	µg/L	J	MDLRL
TPH DRO	SW8015	MKTF-27	2109786-004C	0.15	0.064	mg/L	JB	MBD
TPH DRO	SW8015	MKTF-28	2109786-005C	0.15	0.064	mg/L	JB	MBD
TPH DRO	SW8015	MKTF-29	2109786-006C	0.28	0.064	mg/L	JB	MBD
TPH DRO	SW8015	MKTF-30	2109786-007C	0.1	0.064	mg/L	JB	MBD
TPH DRO	SW8015	DUP-09-15-21	2109786-009C	0.15	0.064	mg/L	JB	MBD
TPH DRO	SW8015	EB-09-15-21	2109786-001C	0.063	0.064	mg/L	U	MBD, MDLRL
TPH GRO	SW8015	MKTF-30	2109786-007a	0.043	0.05	mg/L	J	MDLRL
TPH ORO	SW8015	MKTF-28	2109786-005C	0.078	0.08	mg/L	J	MDLRL
TPH ORO	SW8015	MKTF-29	2109786-006C	0.071	0.08	mg/L	J	MDLRL
TPH ORO	SW8015	DUP-09-15-21	2109786-009C	0.056	0.08	mg/L	J	MDLRL
trans-1,2-Dichloroethene	SW8260B	MKTF-10	2109786-002a	2.7	10	µg/L	J	MDLRL
Vinyl Chloride	SW8260B	MKTF-10	2109786-002a	8.1	10	µg/L	J	MDLRL
Zinc, Dissolved	E 200.7	EB-09-15-21	2109786-001G	0.0078	0.01	mg/L	J	ERPD-FD, MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Zinc, Dissolved	E 200.7	MKTF-27	2109786-004G	0.014	0.01	mg/L	JB	EBD, ERPD-FD
Zinc, Dissolved	E 200.7	MKTF-28	2109786-005G	0.014	0.01	mg/L	JB	EBD, ERPD-FD
Zinc, Dissolved	E 200.7	MKTF-10	2109786-002G	0.009	0.01	mg/L	U	EBD, ERPD-FD, MDLRL
Zinc, Dissolved	E 200.7	MKTF-11	2109786-003G	0.007	0.01	mg/L	U	EBD, ERPD-FD, MDLRL
Zinc, Dissolved	E 200.7	MKTF-29	2109786-006G	0.0077	0.01	mg/L	U	EBD, ERPD-FD, MDLRL
Zinc, Dissolved	E 200.7	MKTF-30	2109786-007G	0.038	0.01	mg/L	JB	DIS-TOT, EBD, ERPD-FD
Zinc, Dissolved	E 200.7	DUP-09-15-21	2109786-009G	0.048	0.01	mg/L	JB	DIS-TOT, EBD, ERPD-FD
Zinc, Total	E 200.7	MKTF-10	2109786-002F	0.0092	0.01	mg/L	J	MDLRL
Zinc, Total	E 200.7	DUP-09-15-21	2109786-009F	ND	0.01	mg/L	UJ	DIS-TOT
Zinc, Total	E 200.7	MKTF-30	2109786-007F	0.0074	0.01	mg/L	J	DIS-TOT, MDLRL

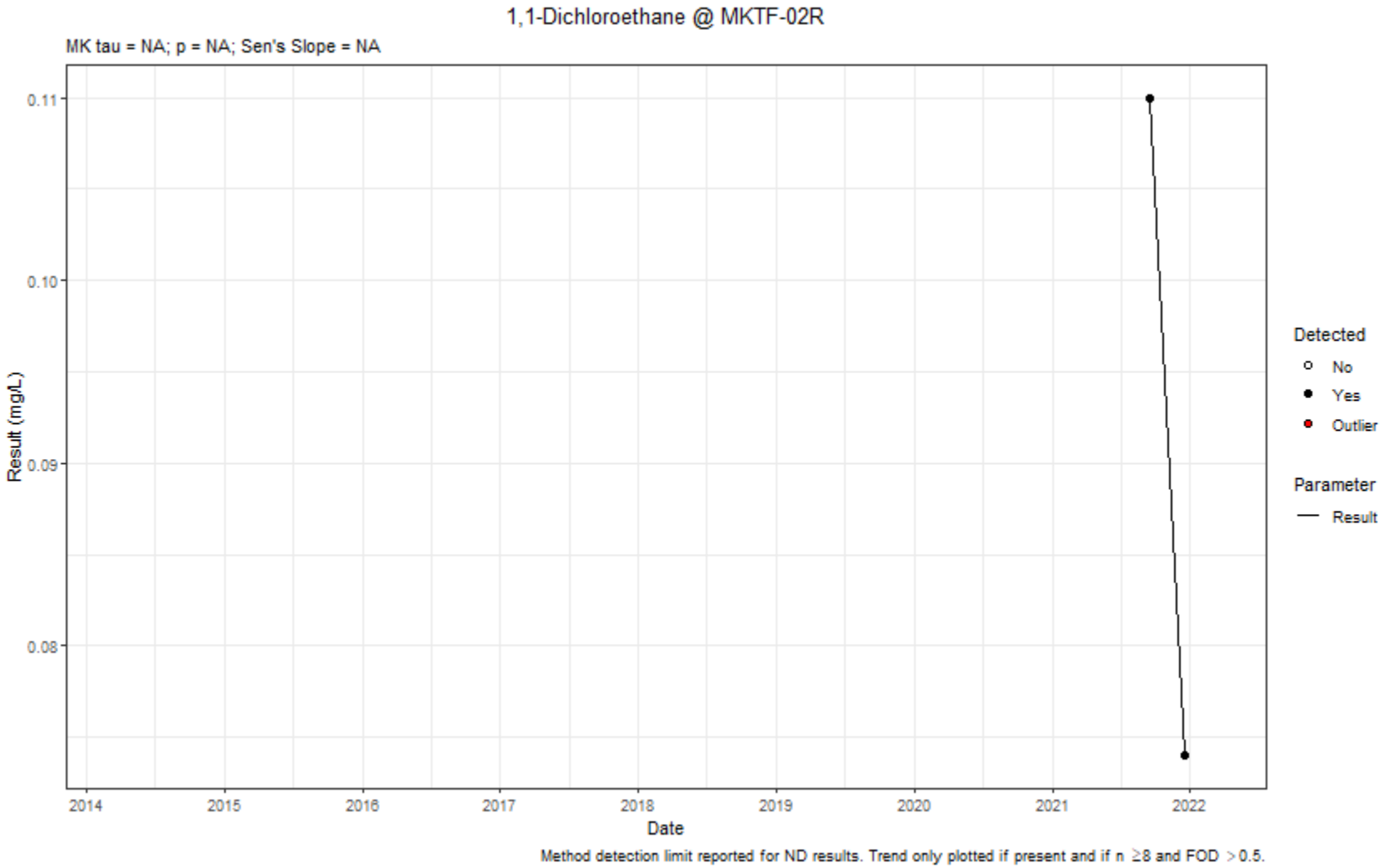


Appendix C – CVOC Time Series Plots

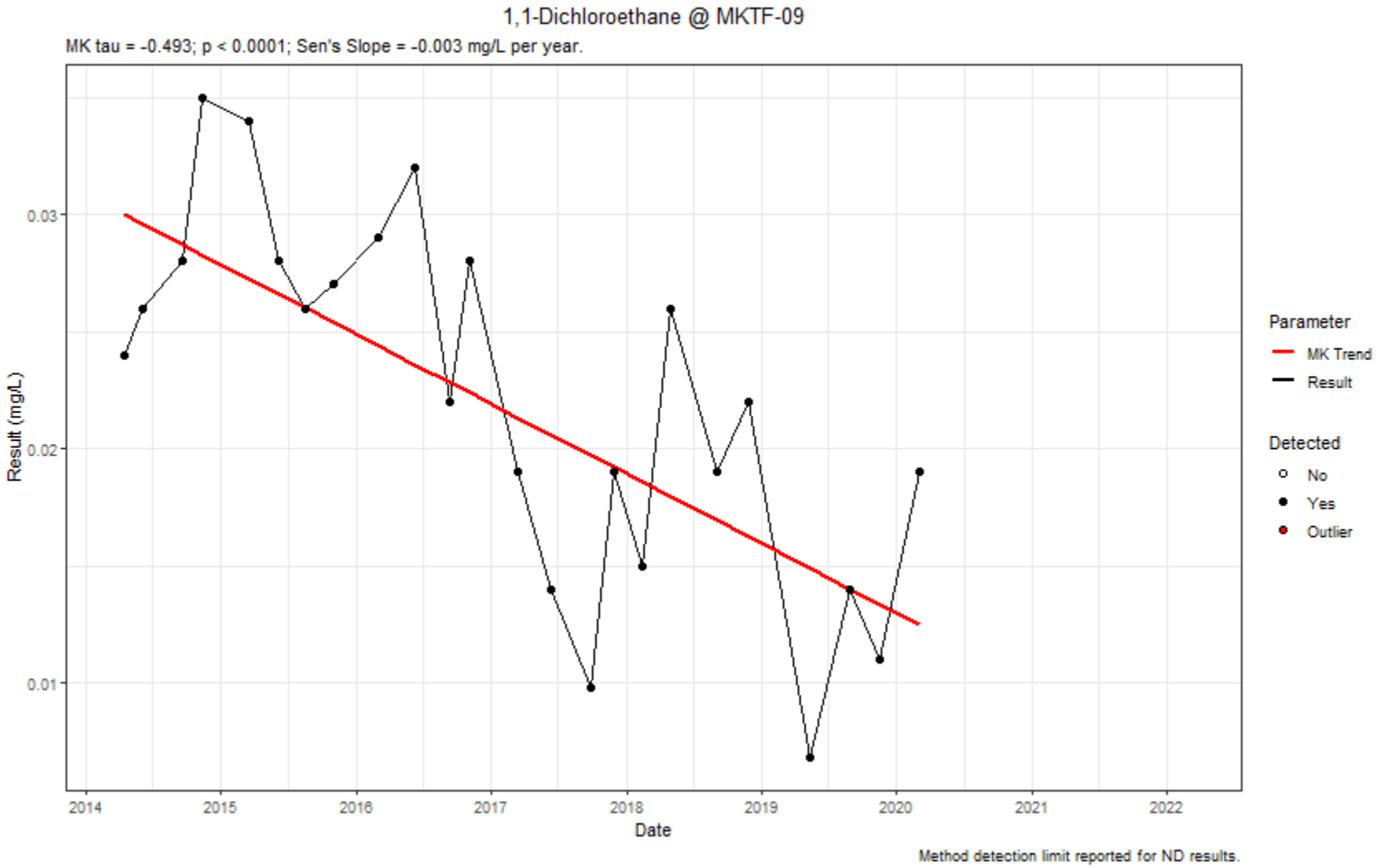
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WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO



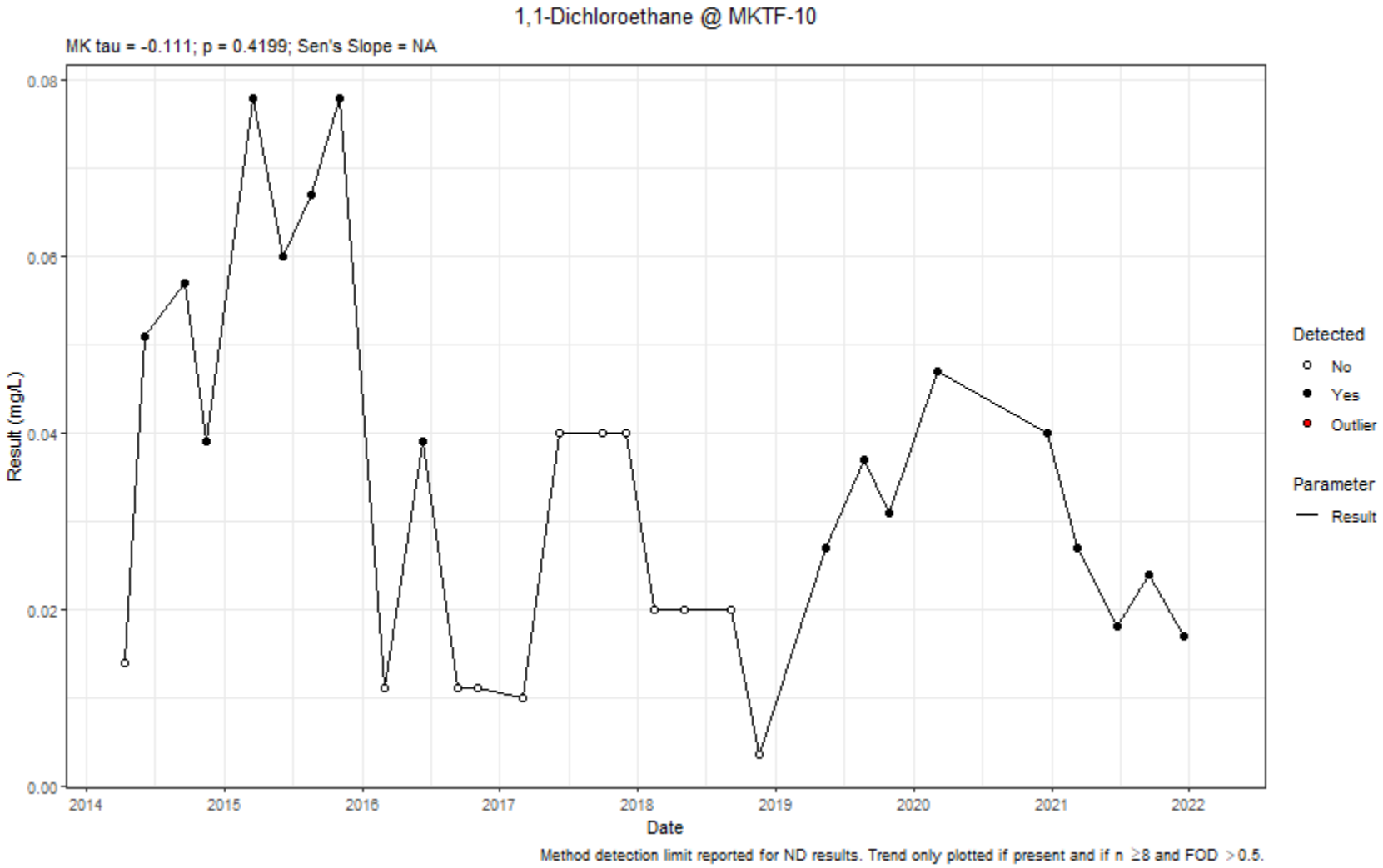
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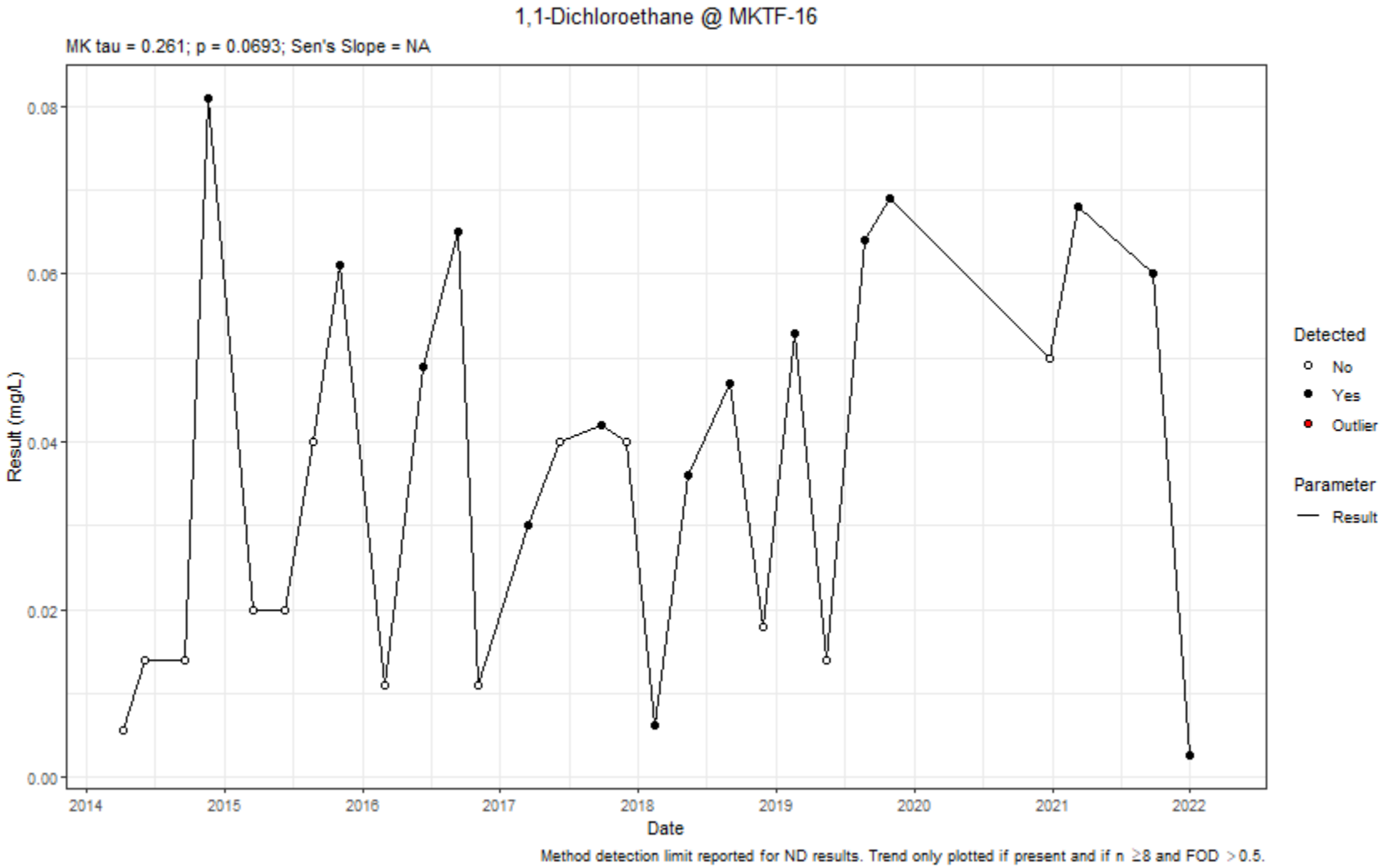
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WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO



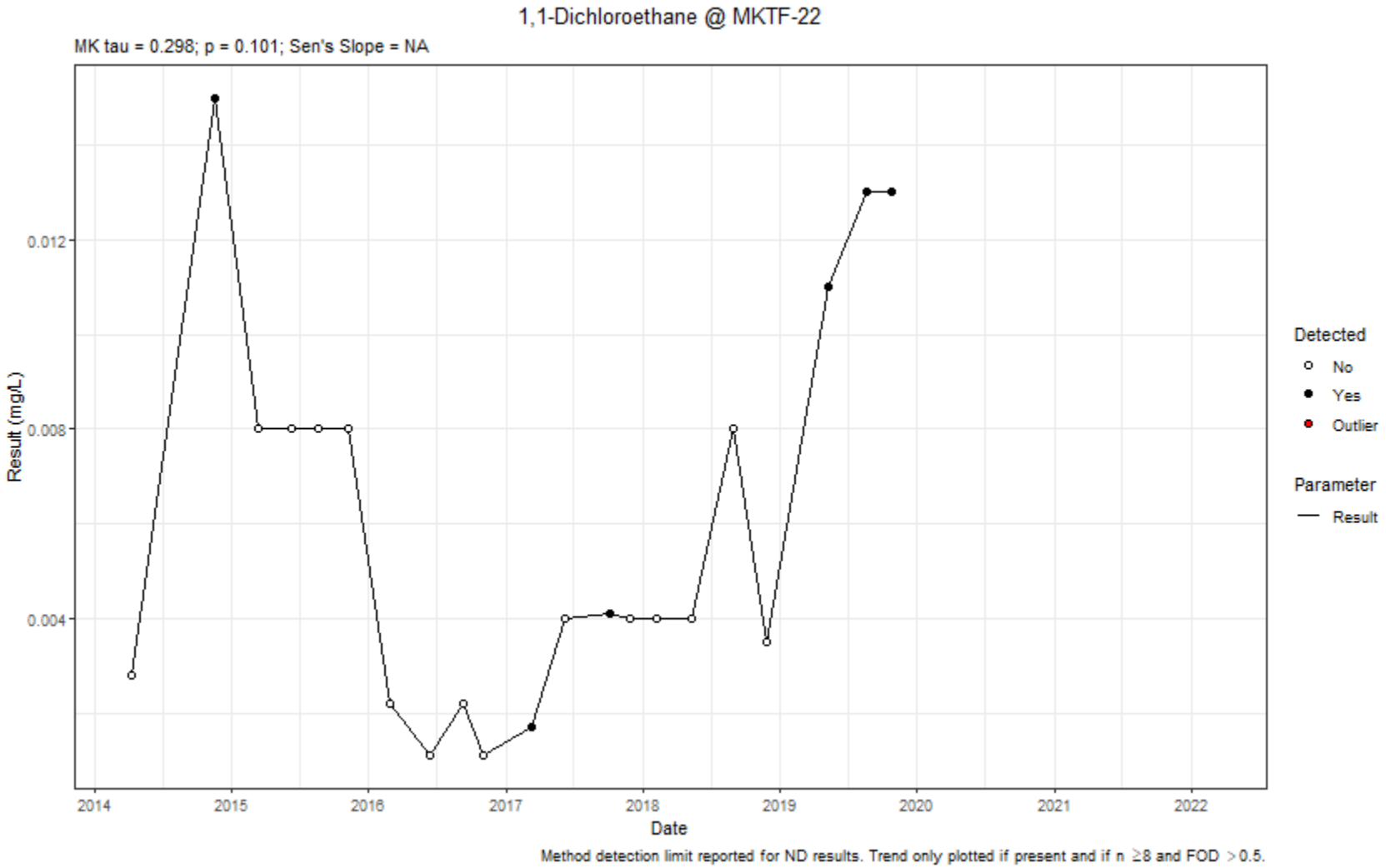
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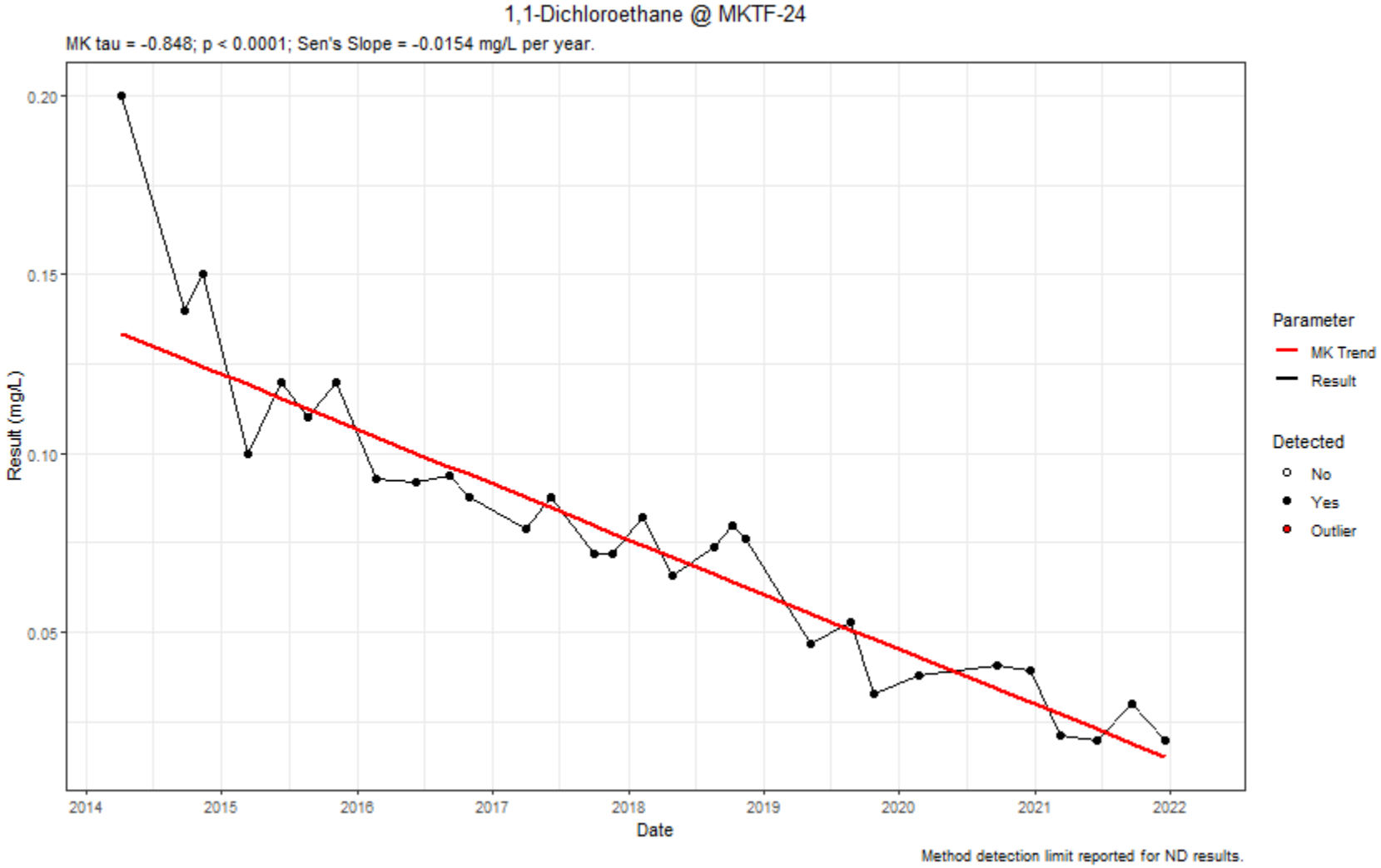
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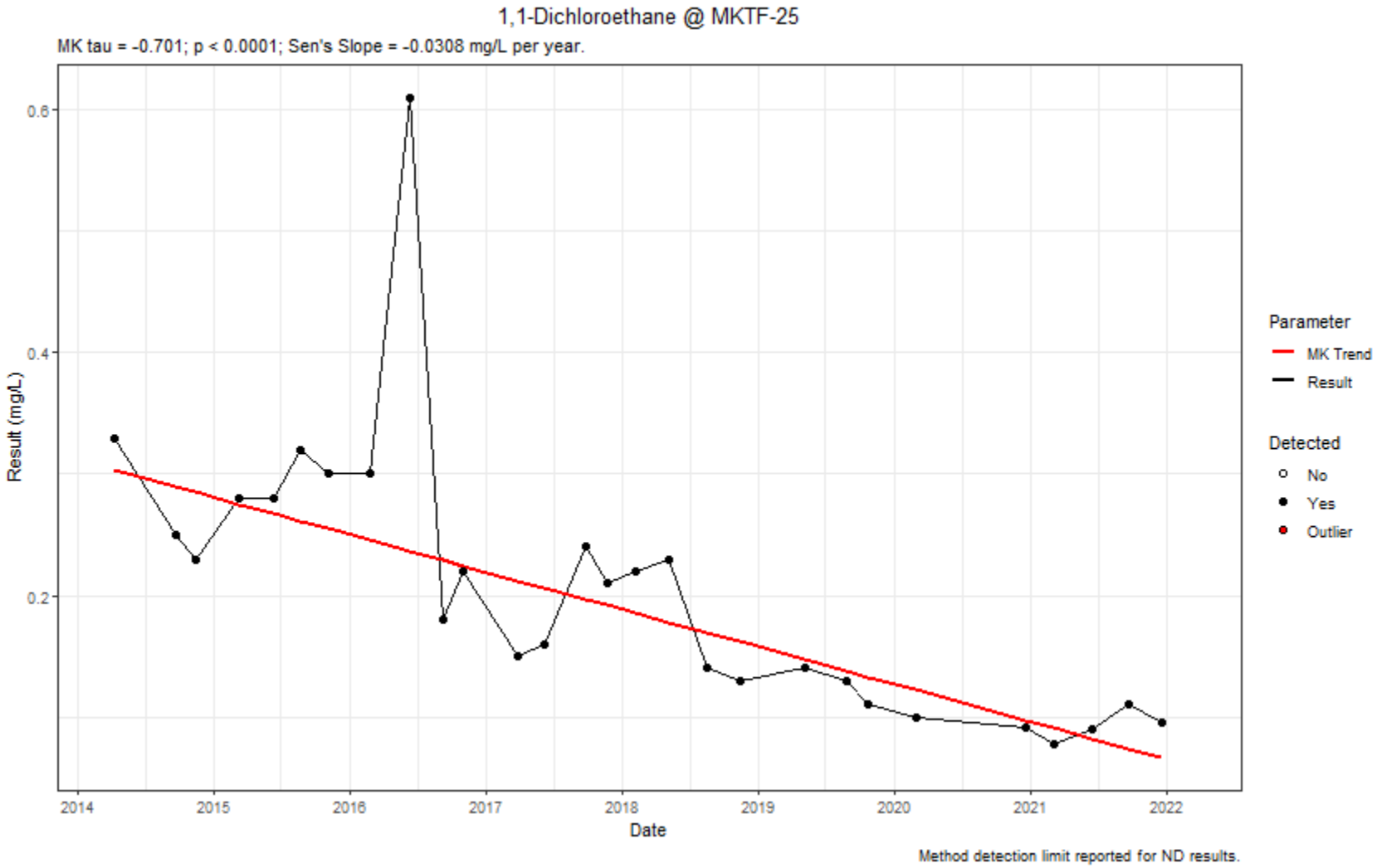
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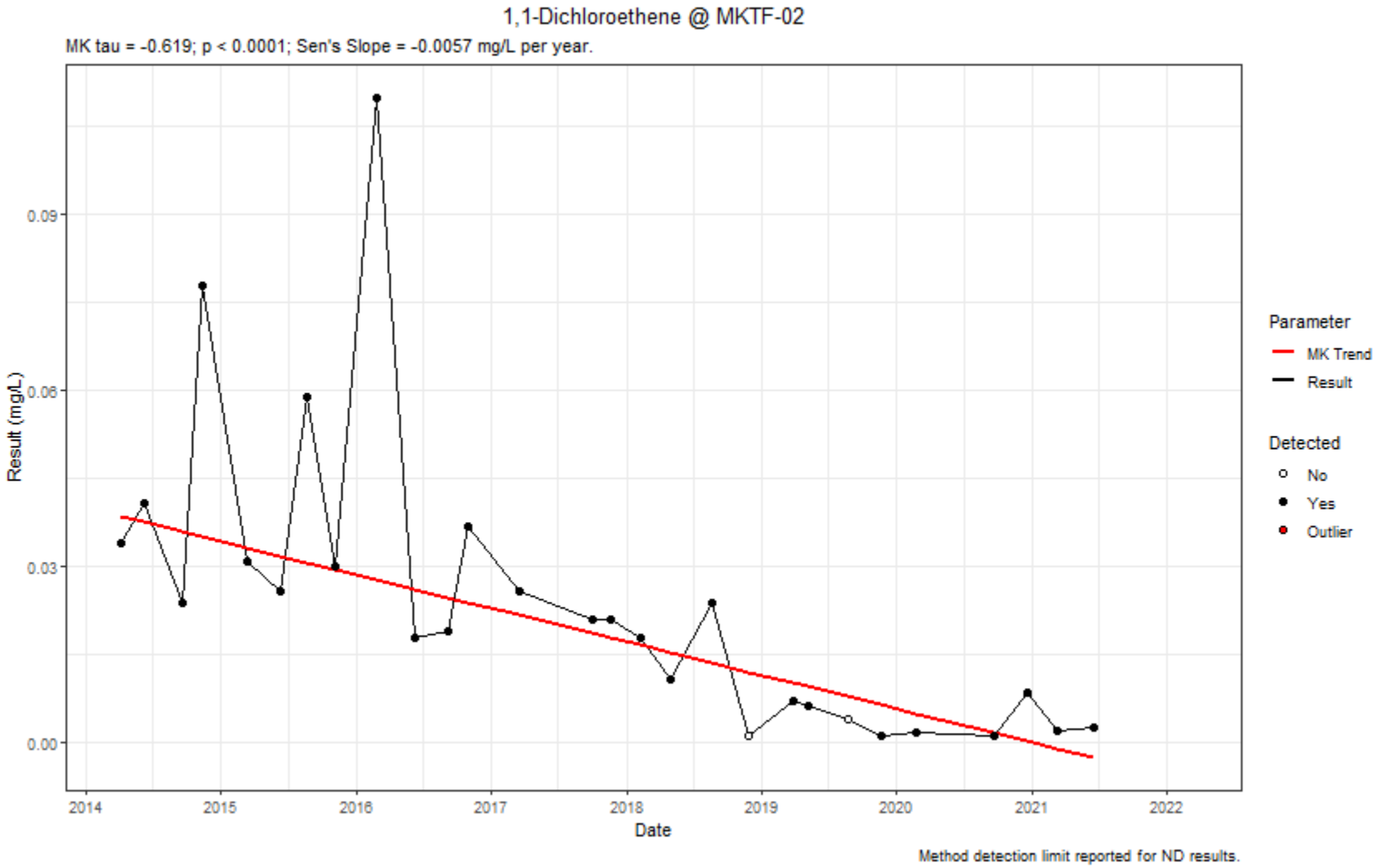
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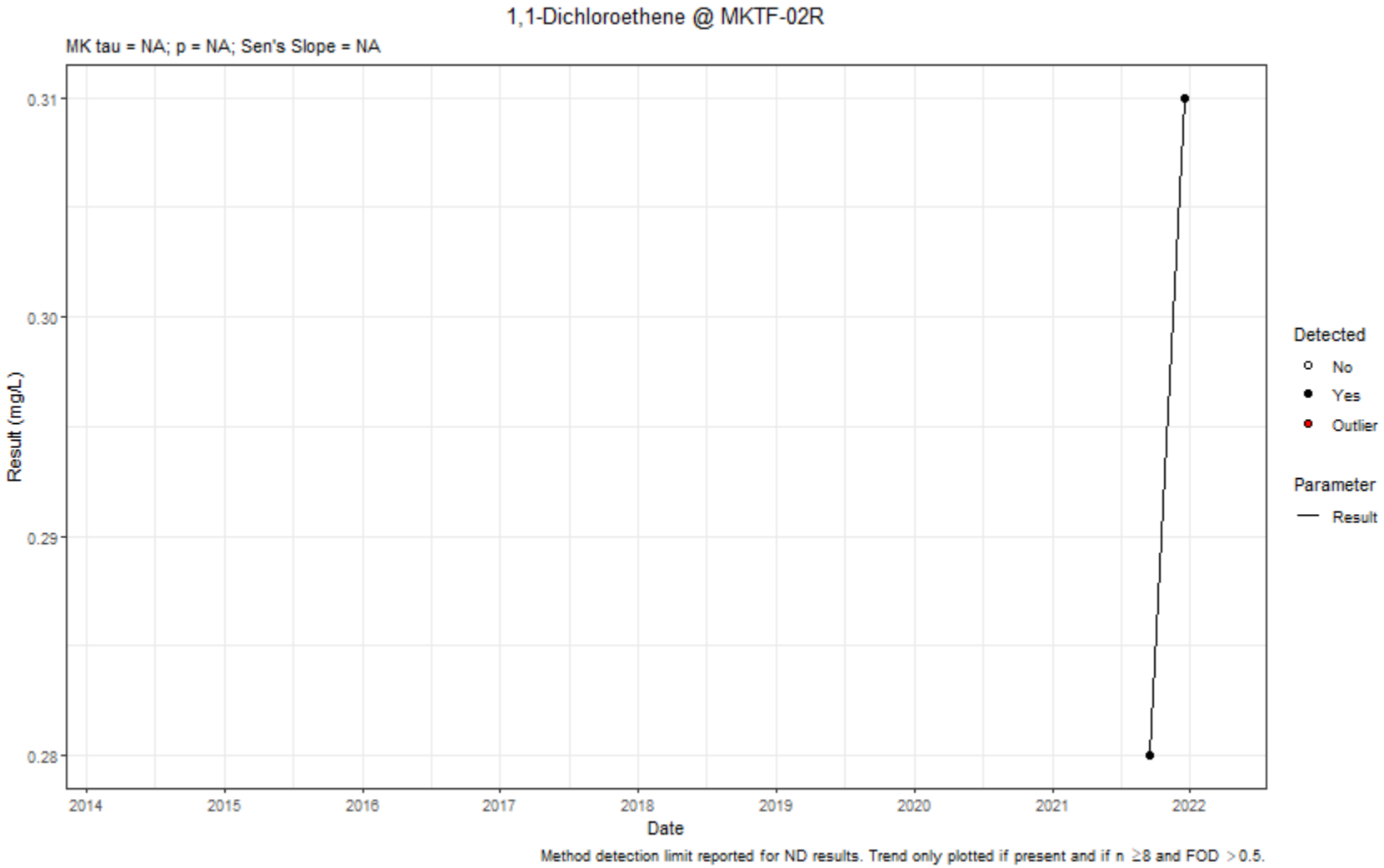
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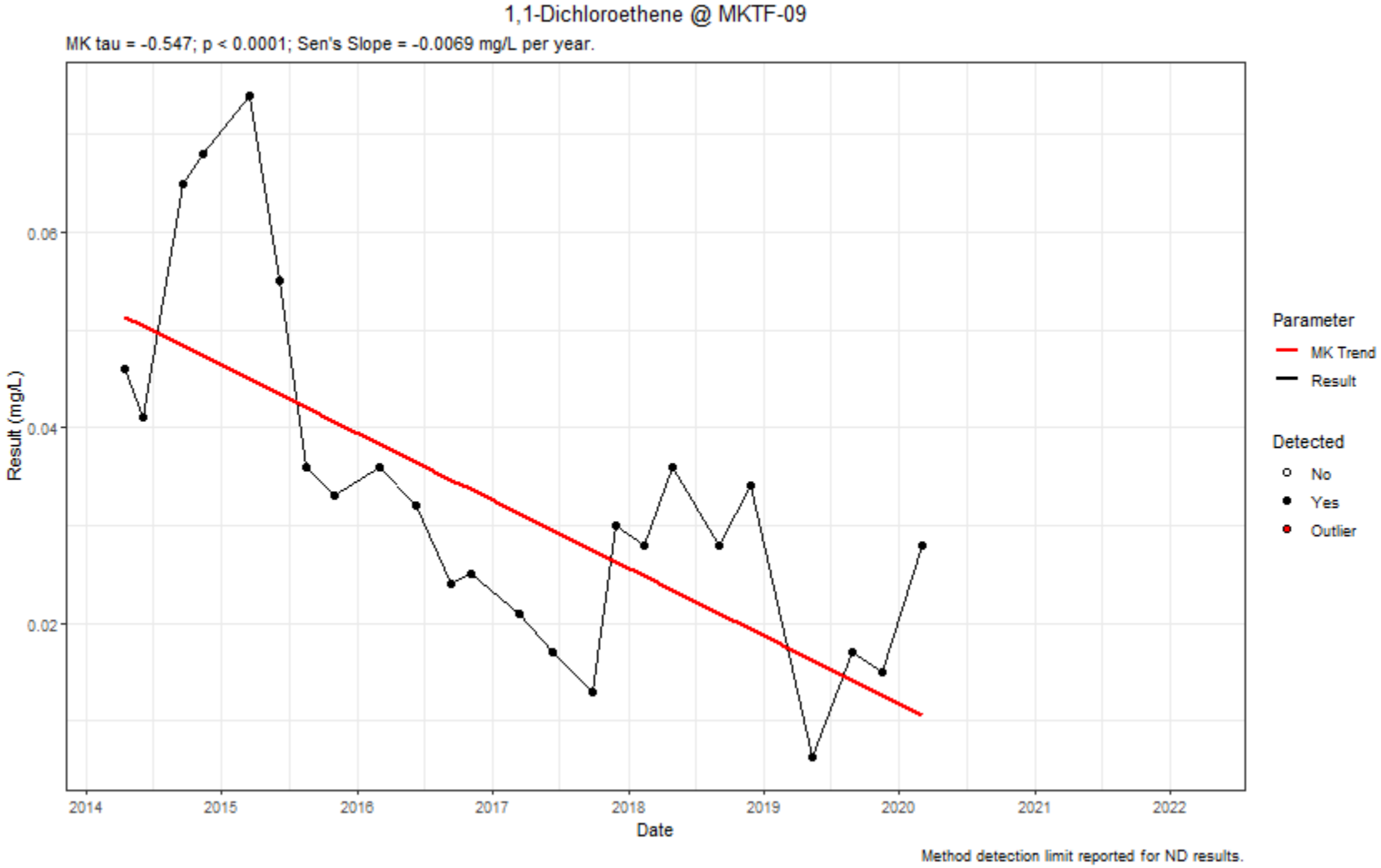
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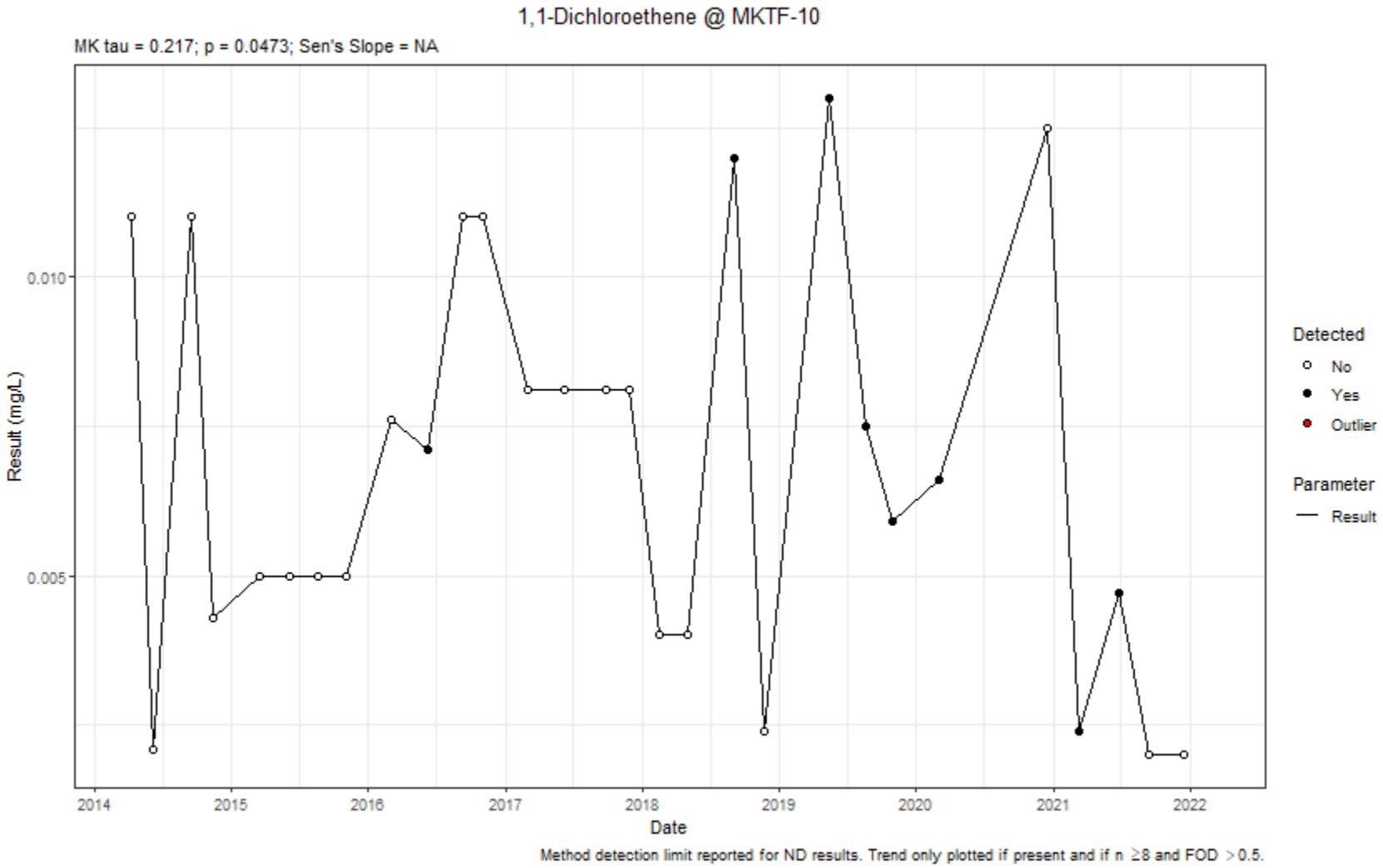
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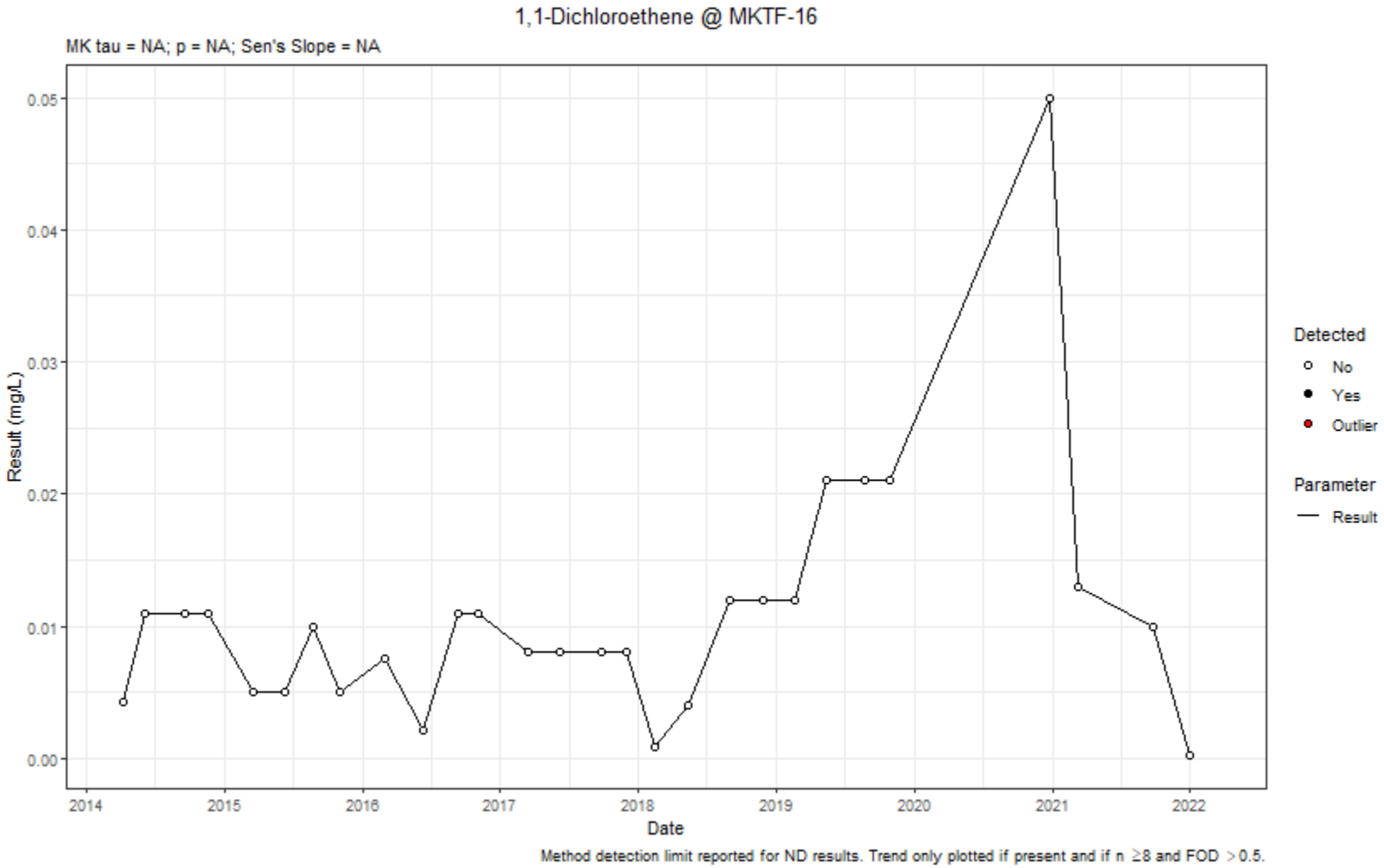
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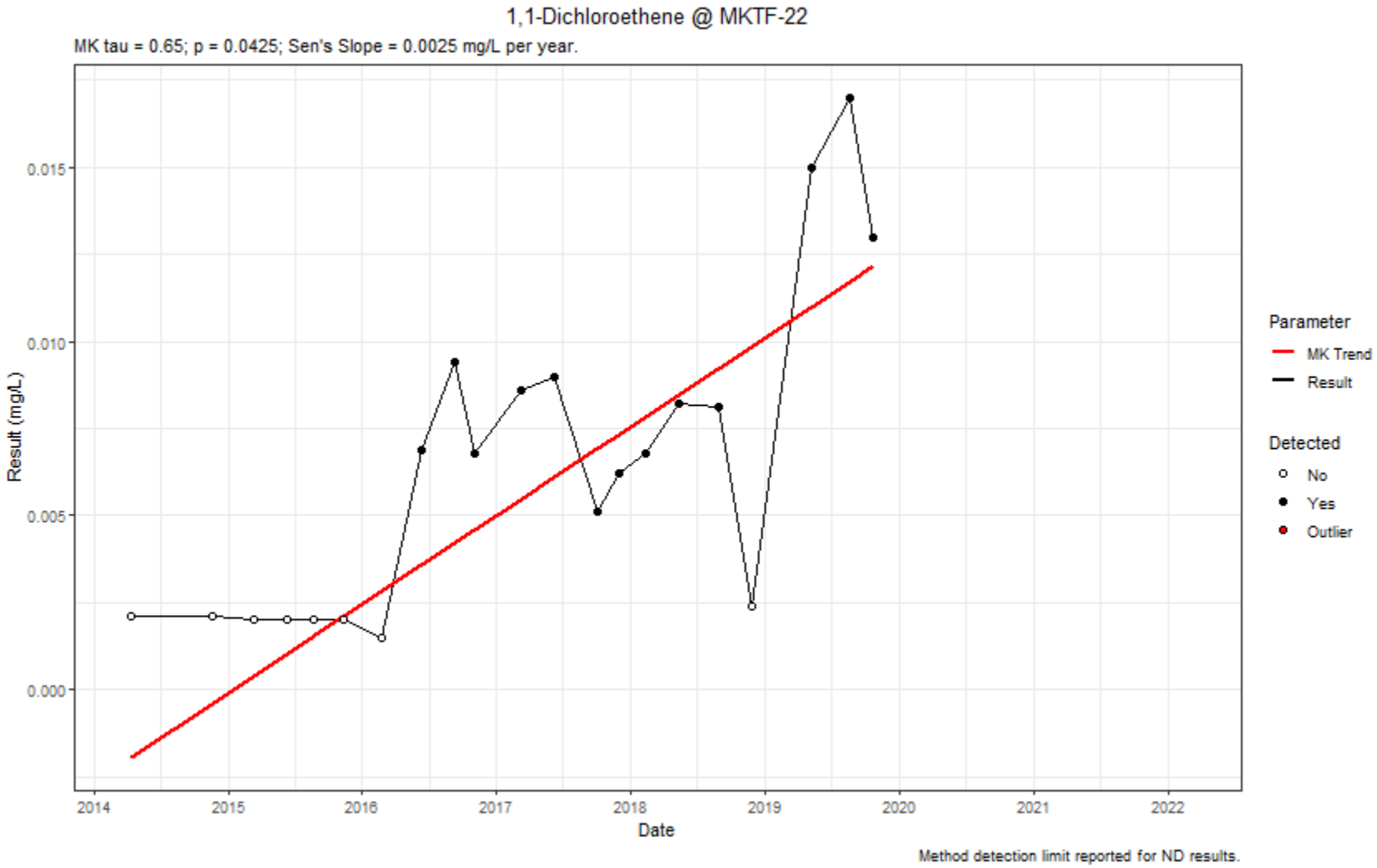
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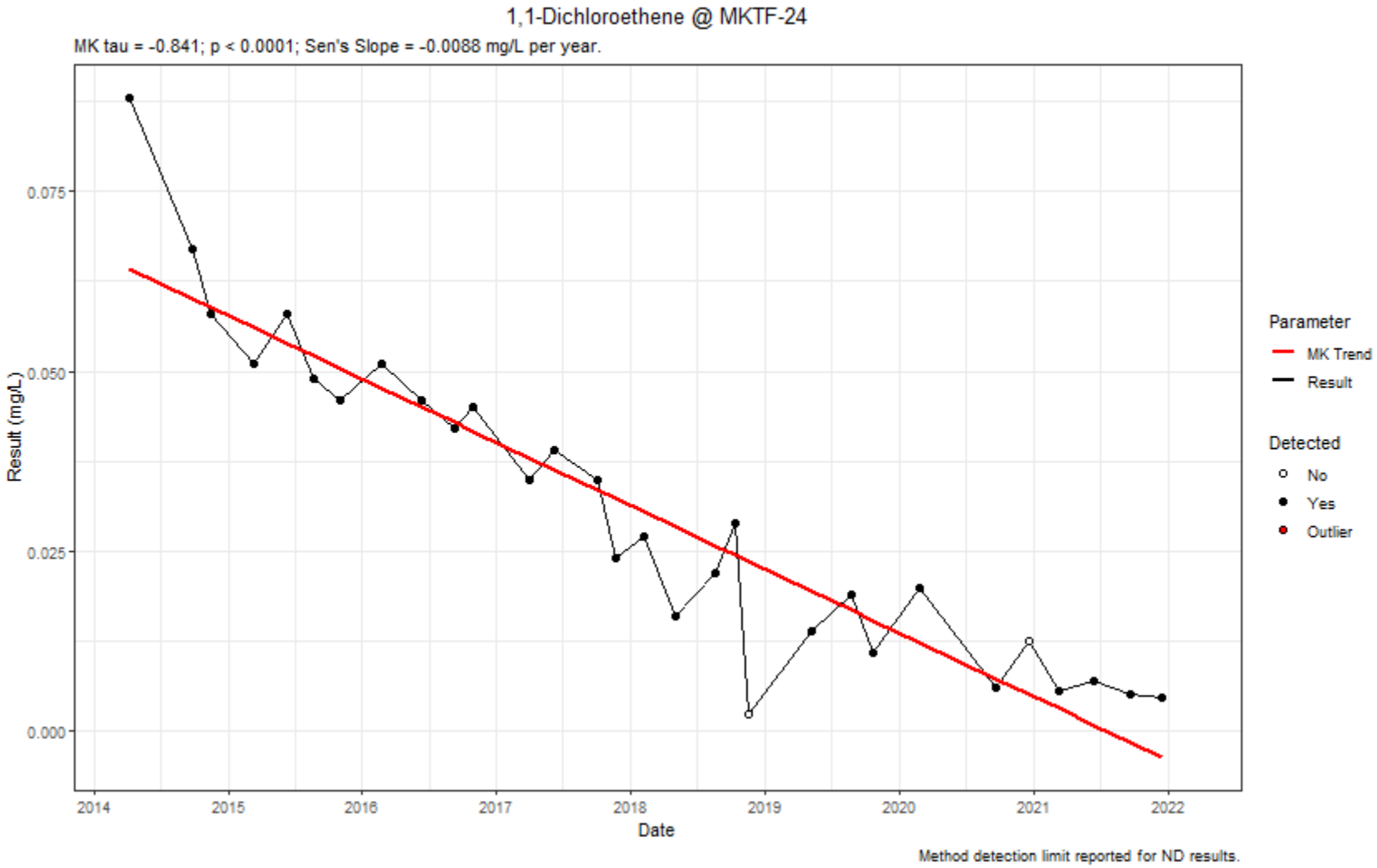
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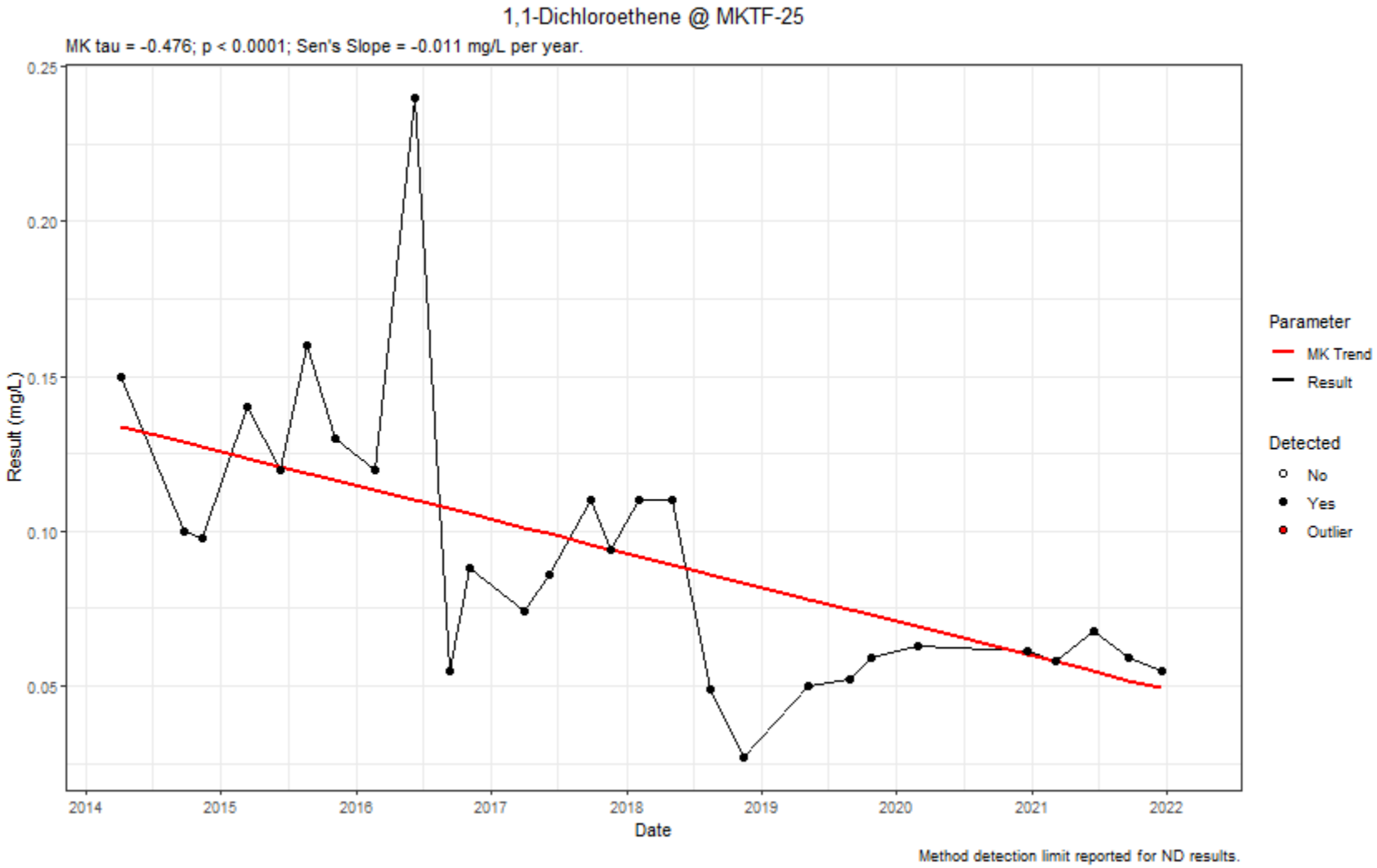
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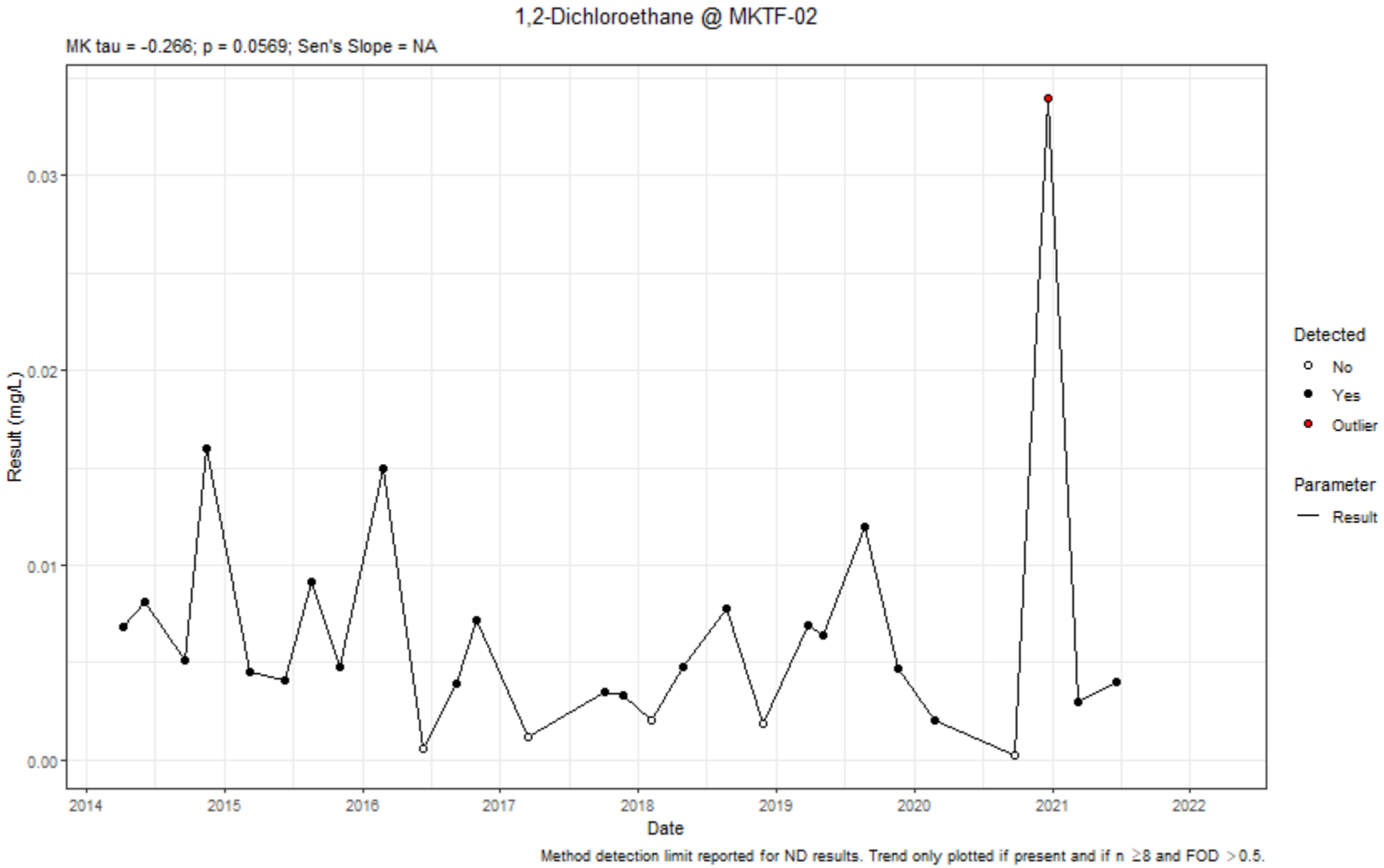
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WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO



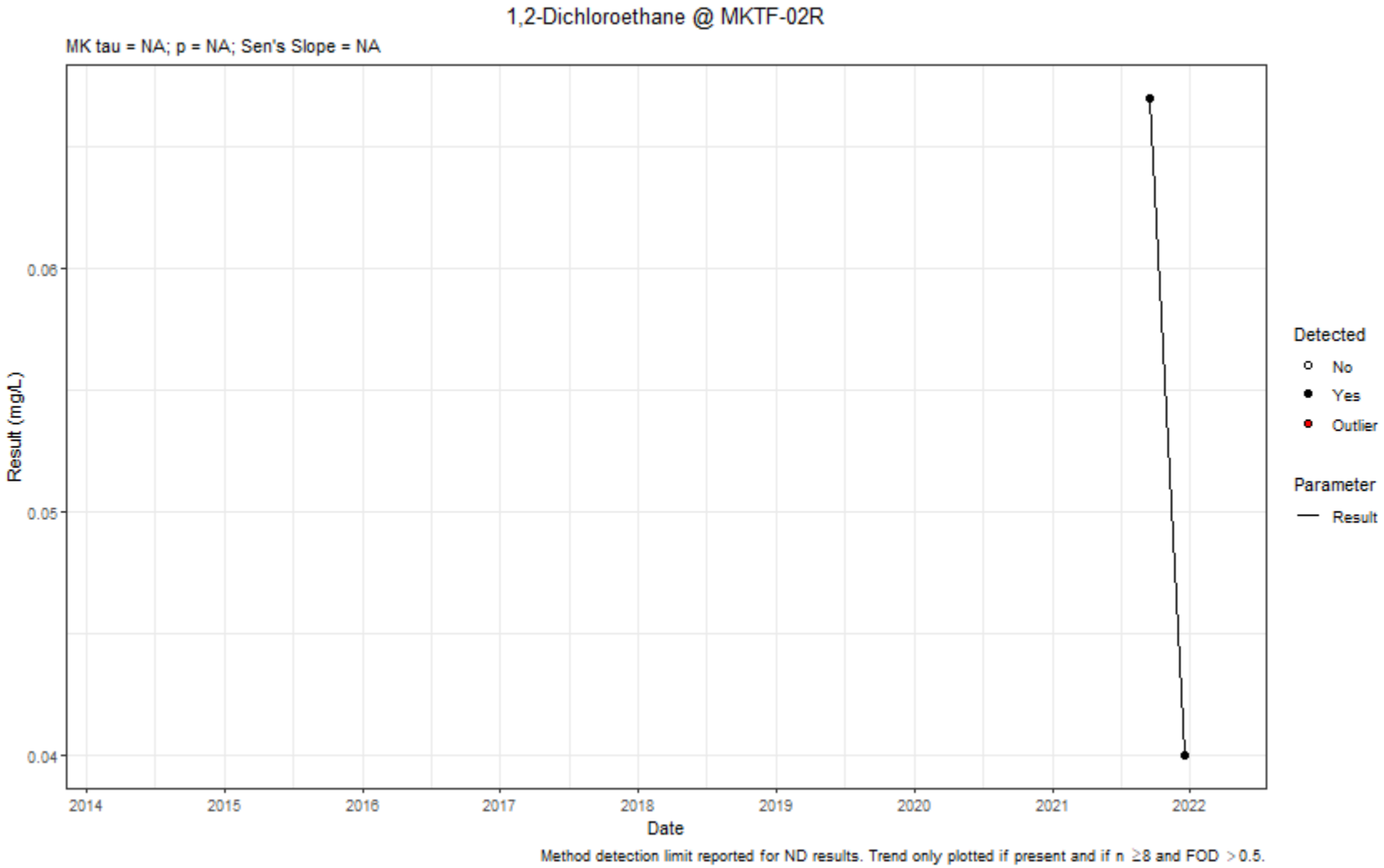
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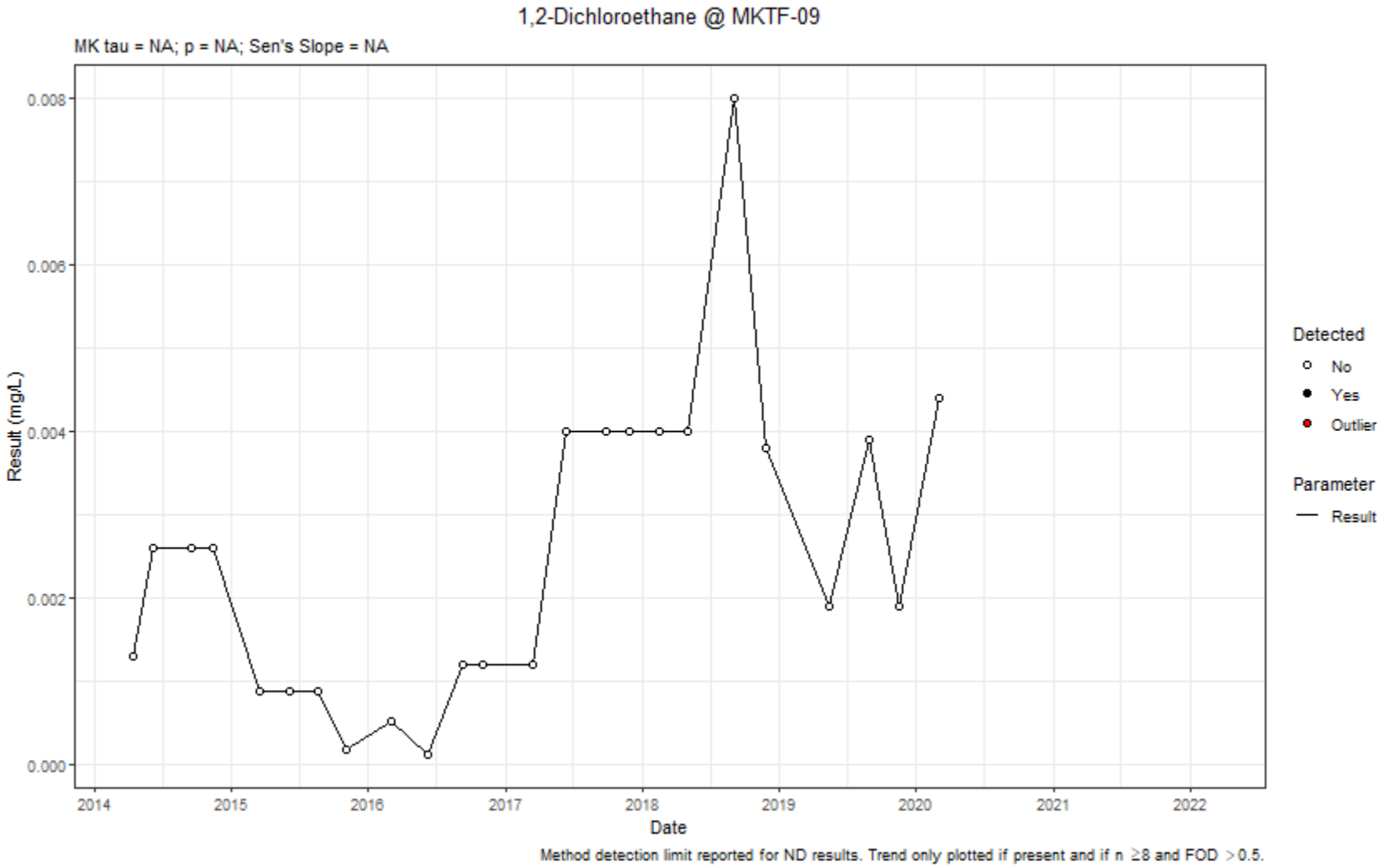
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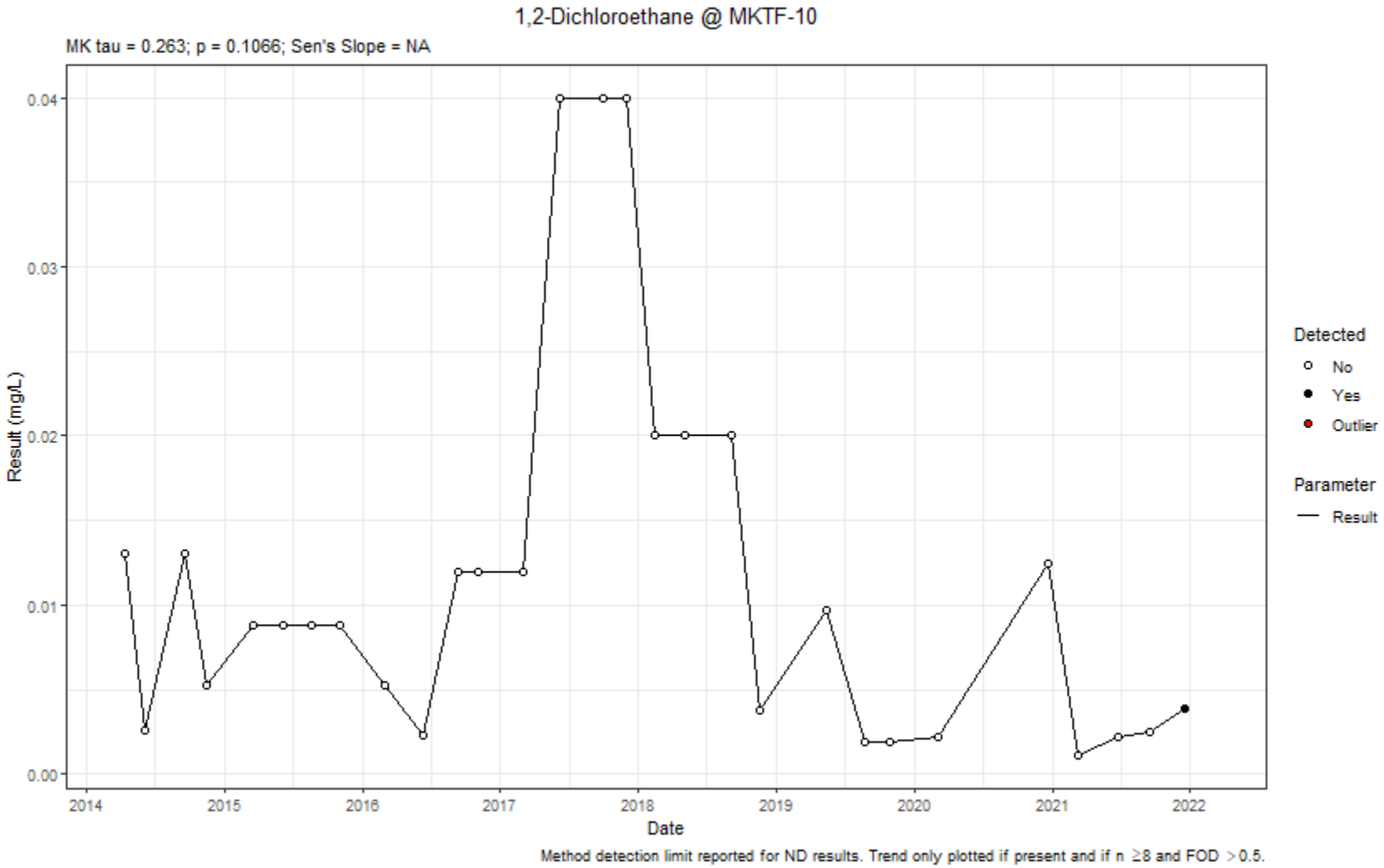
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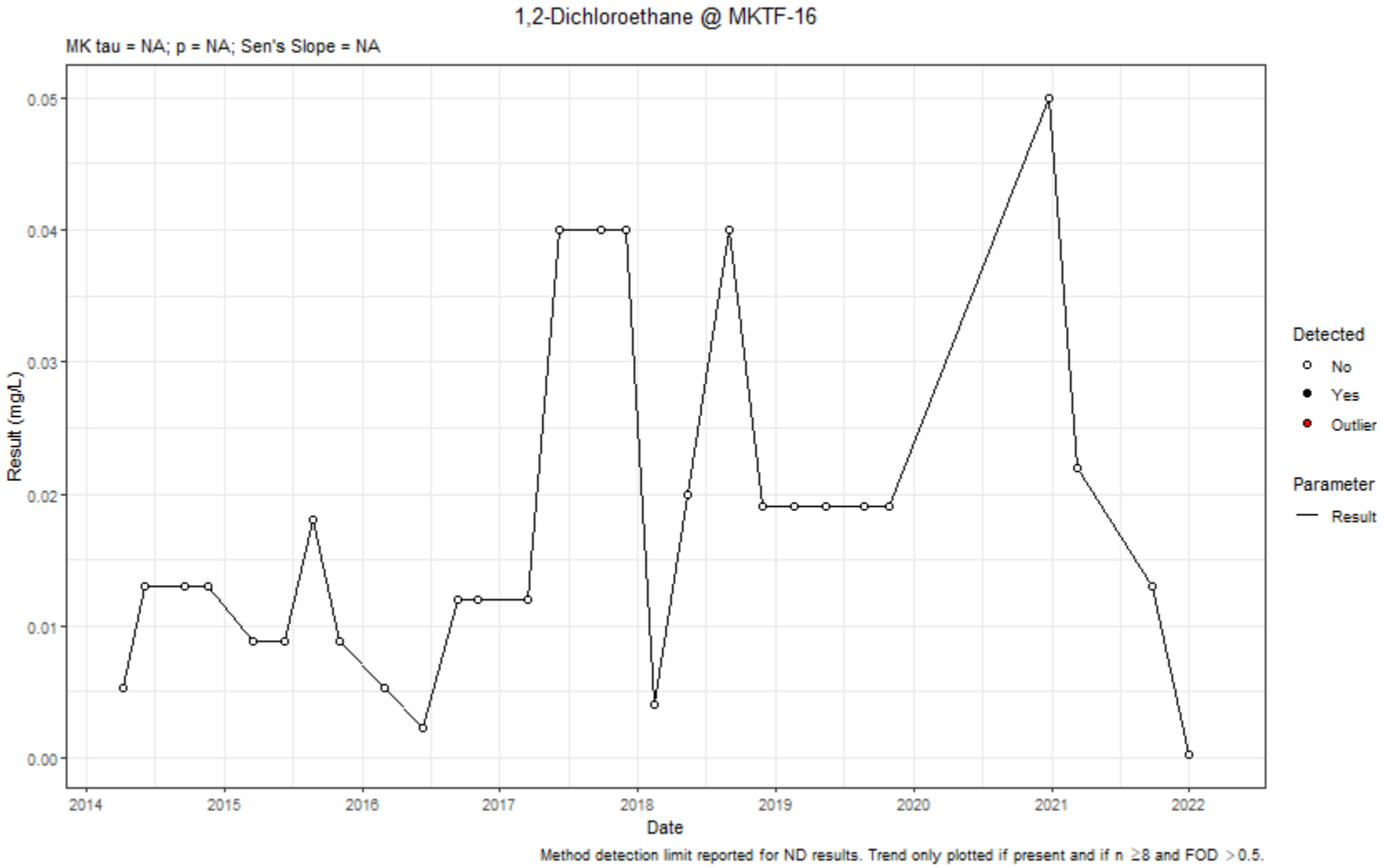
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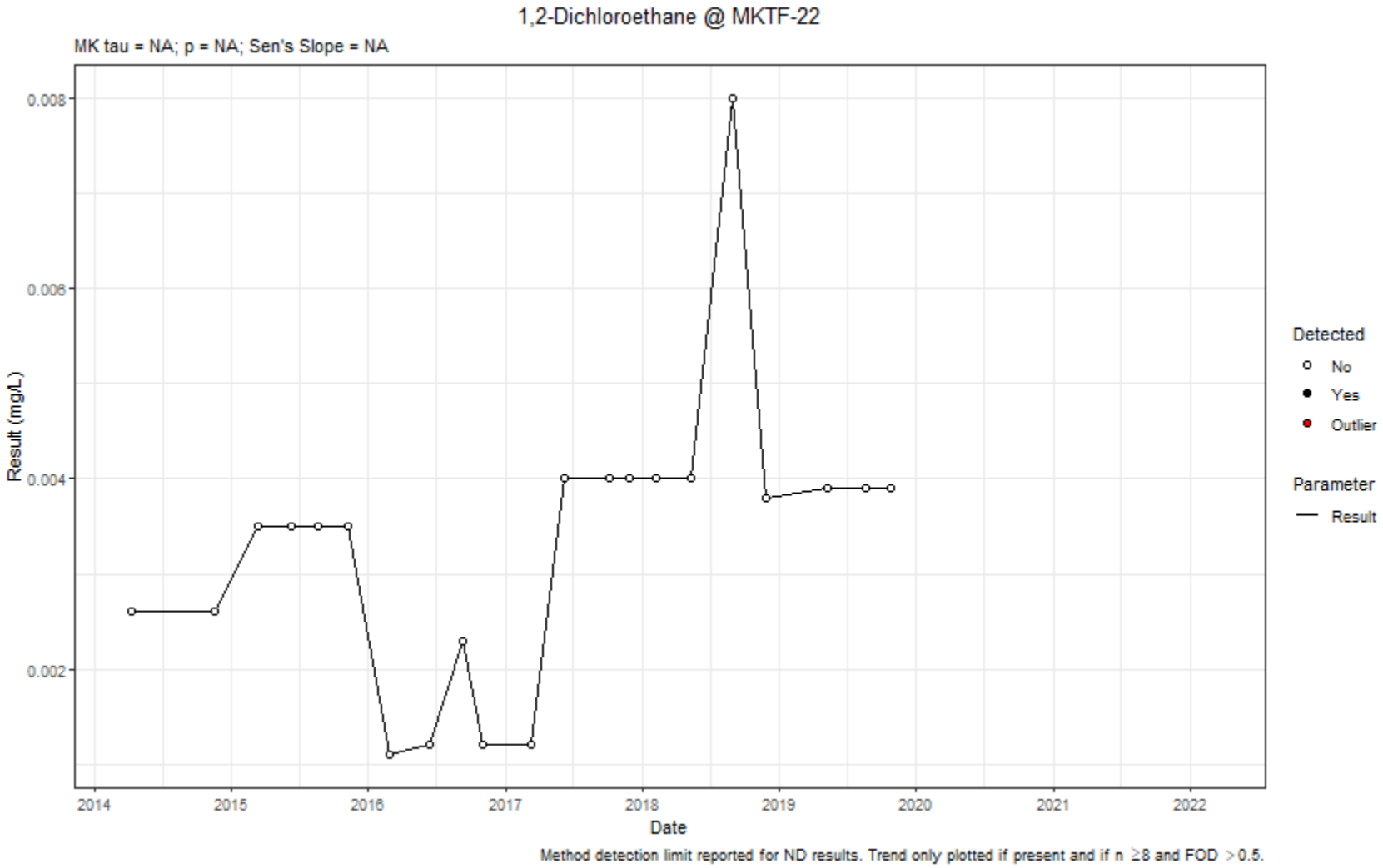
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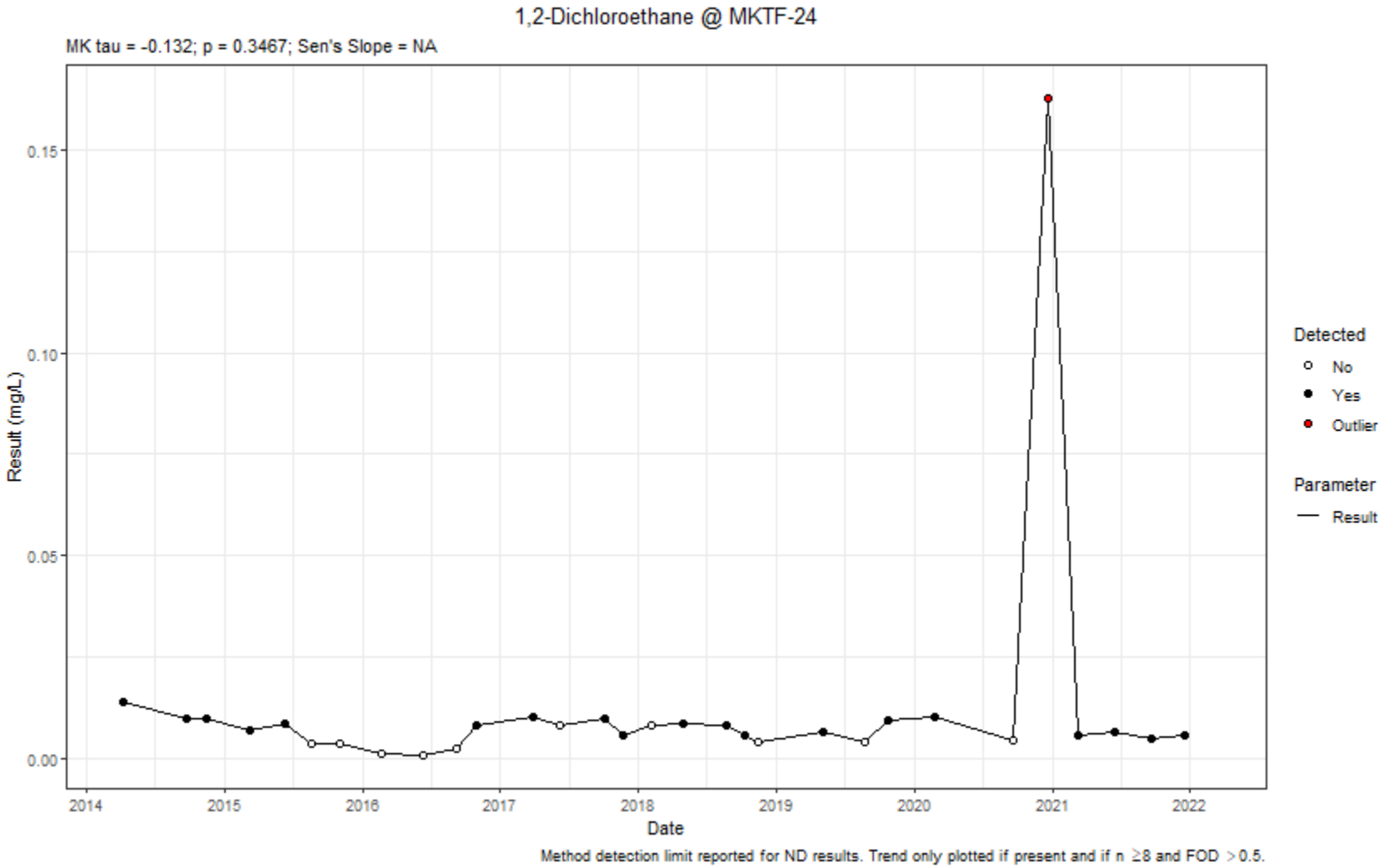
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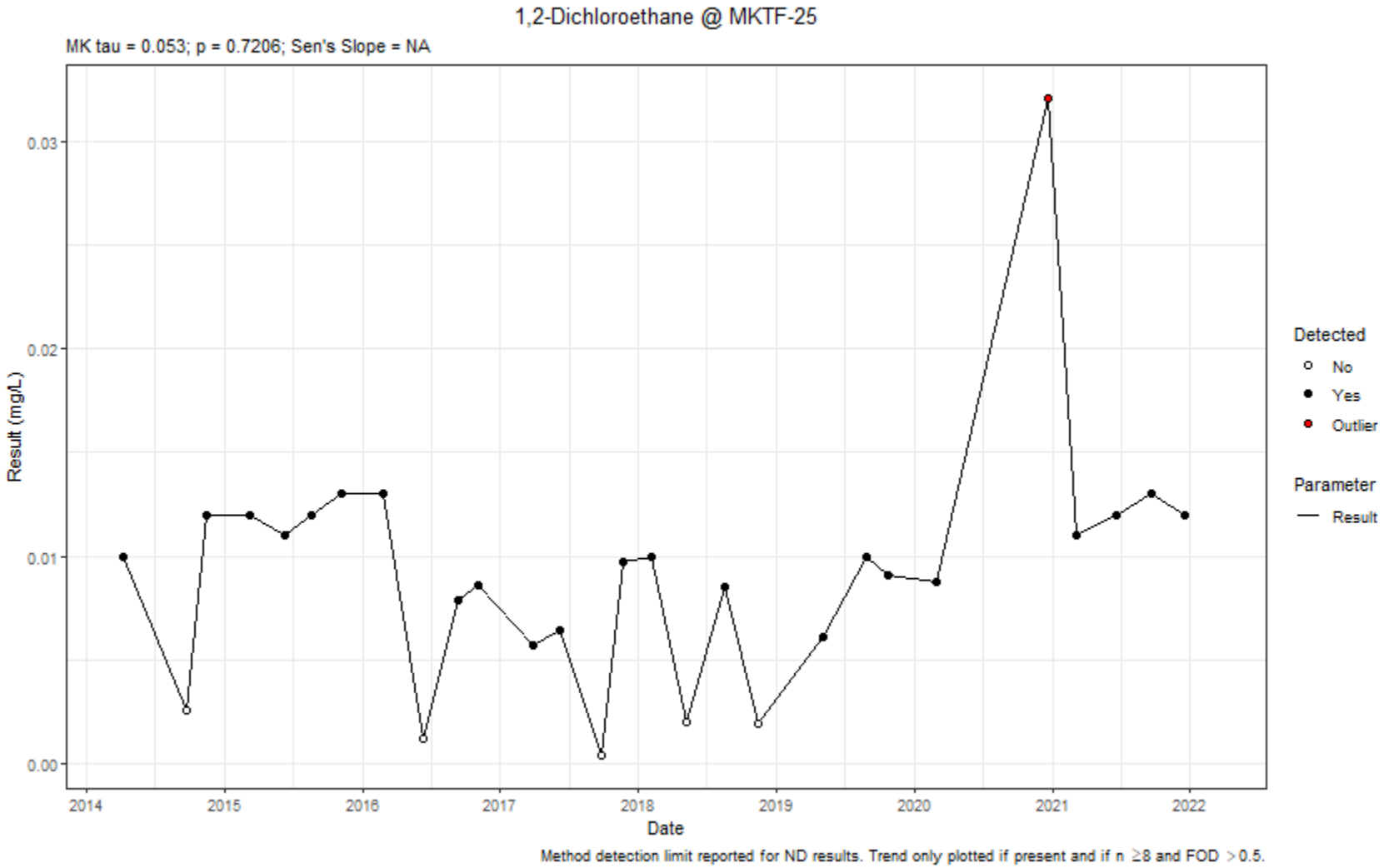
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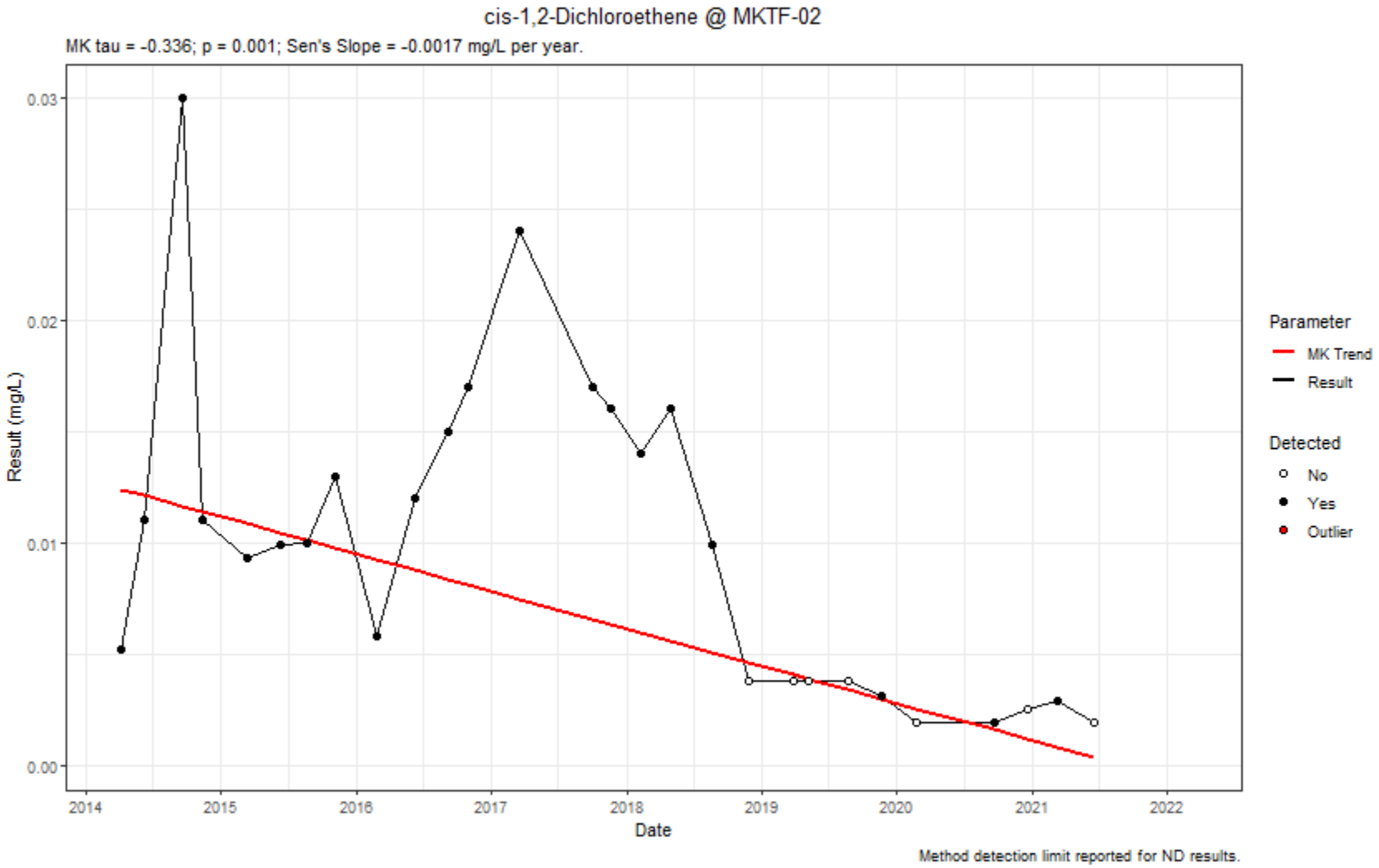
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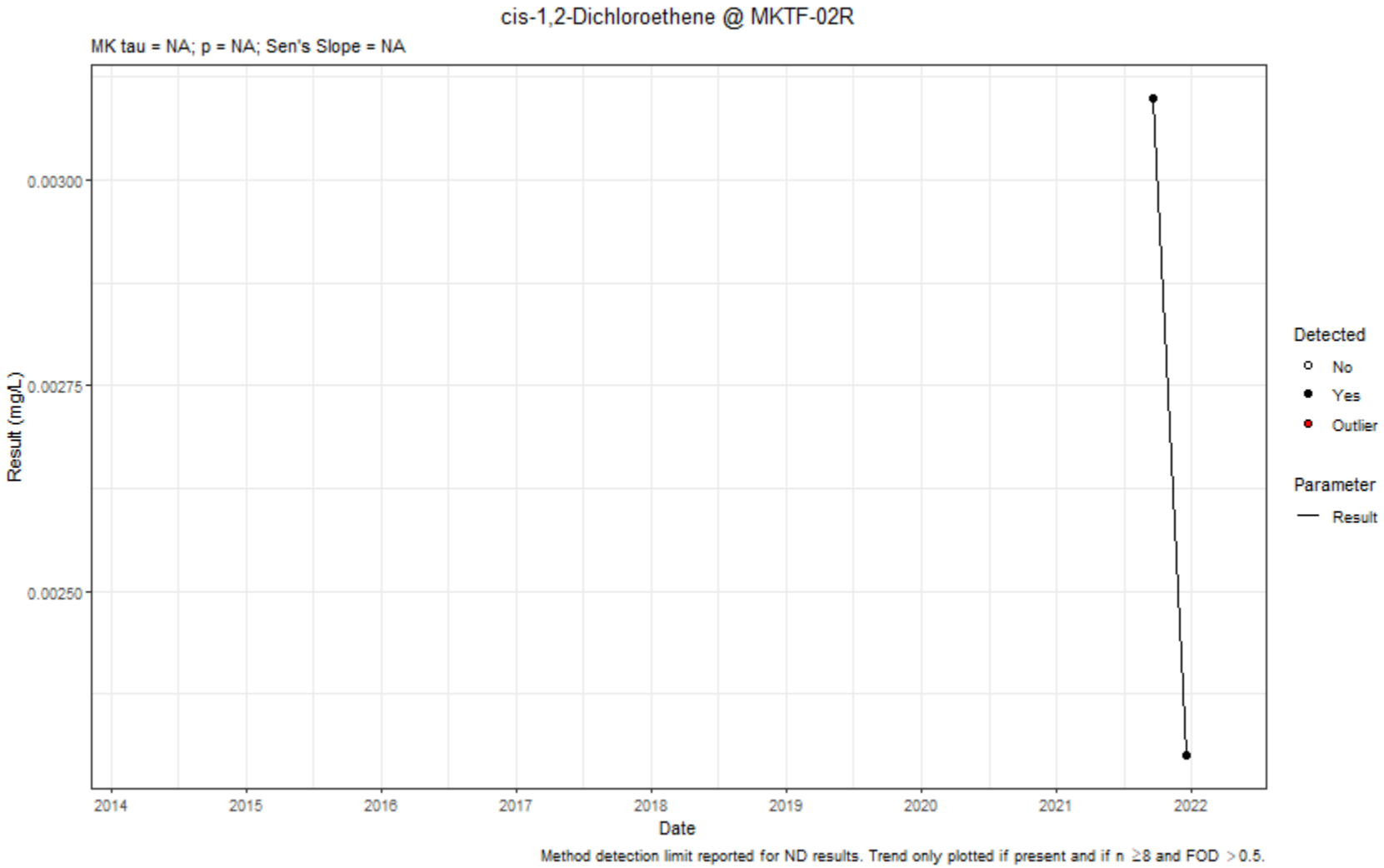
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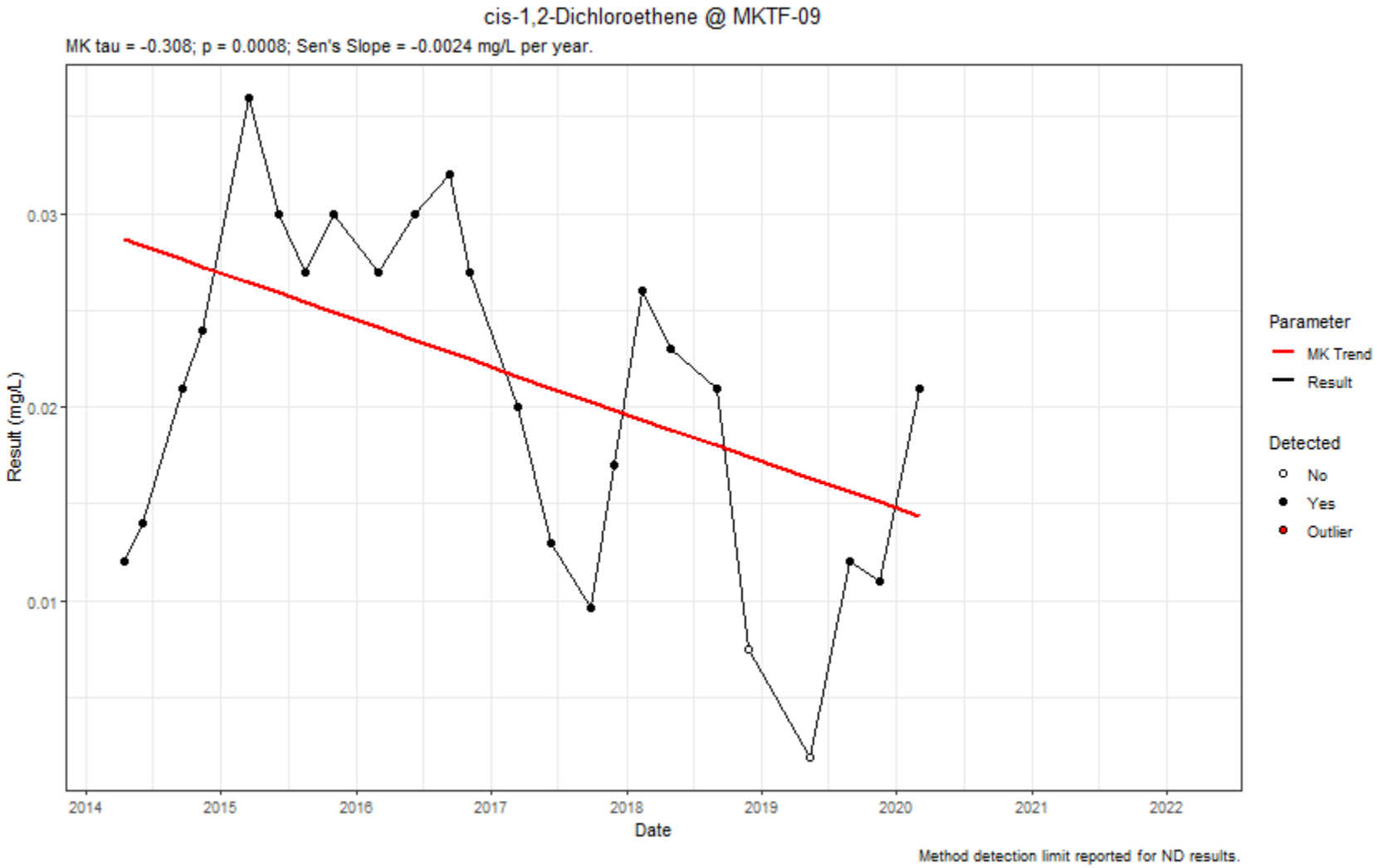
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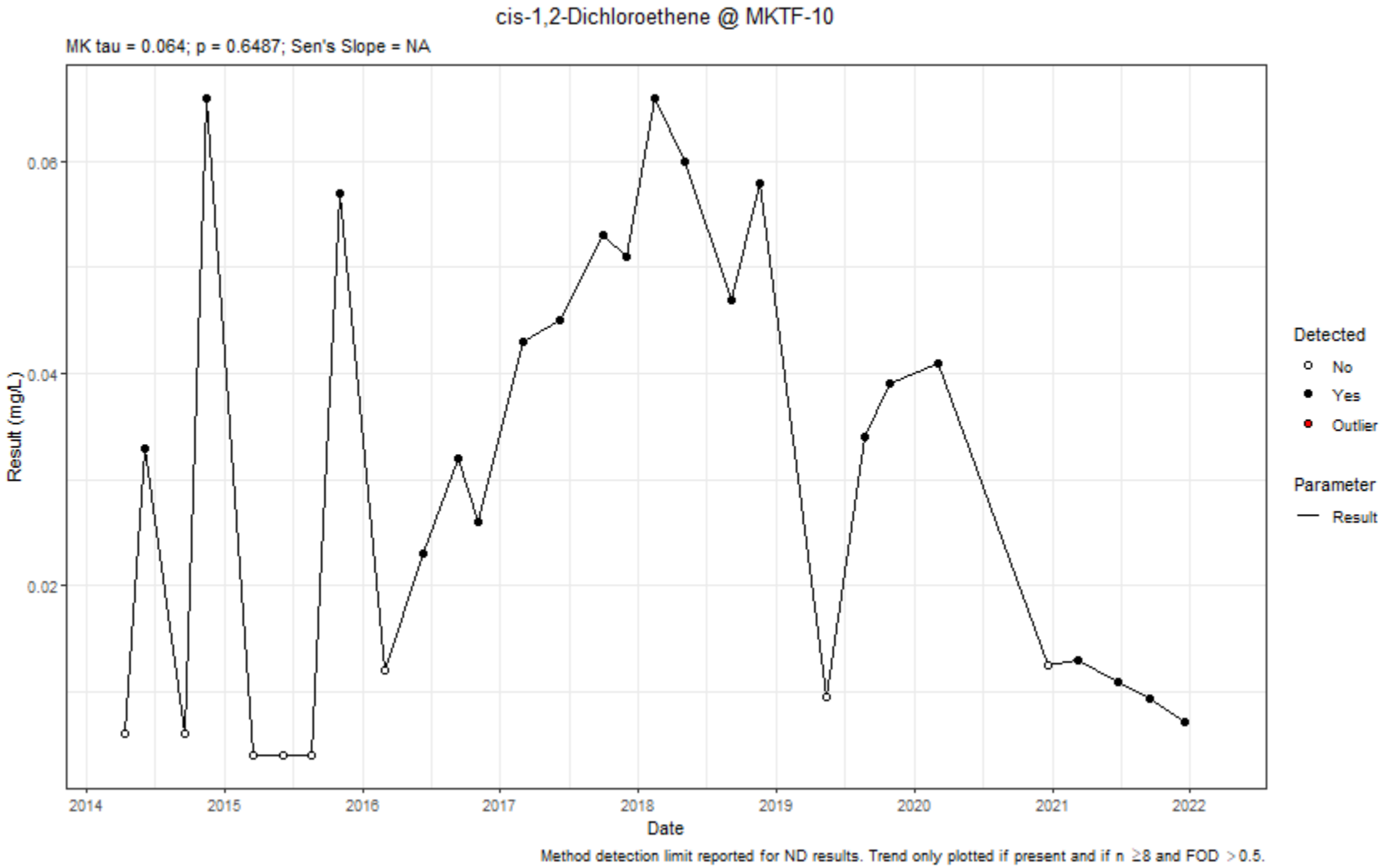
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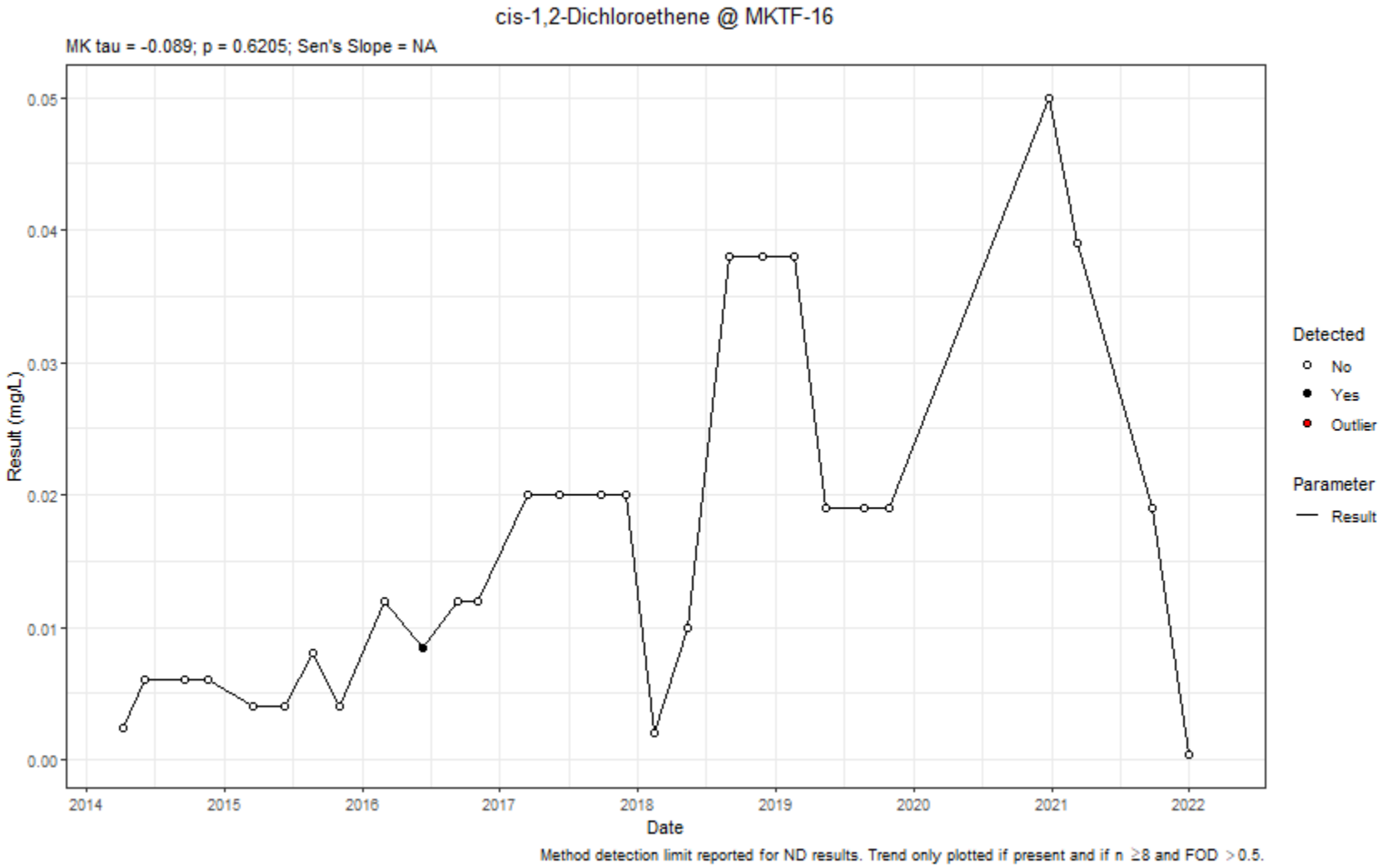
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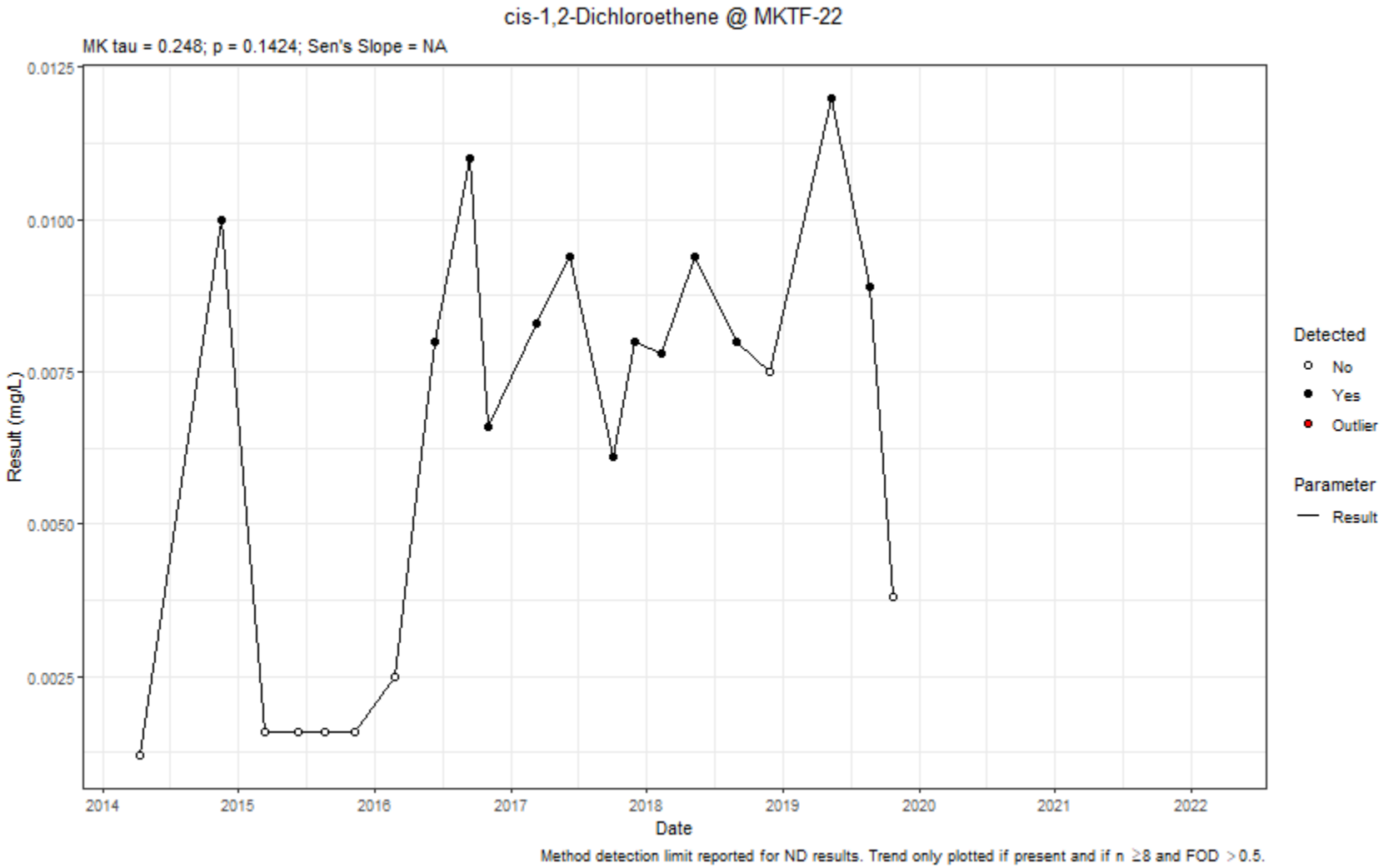
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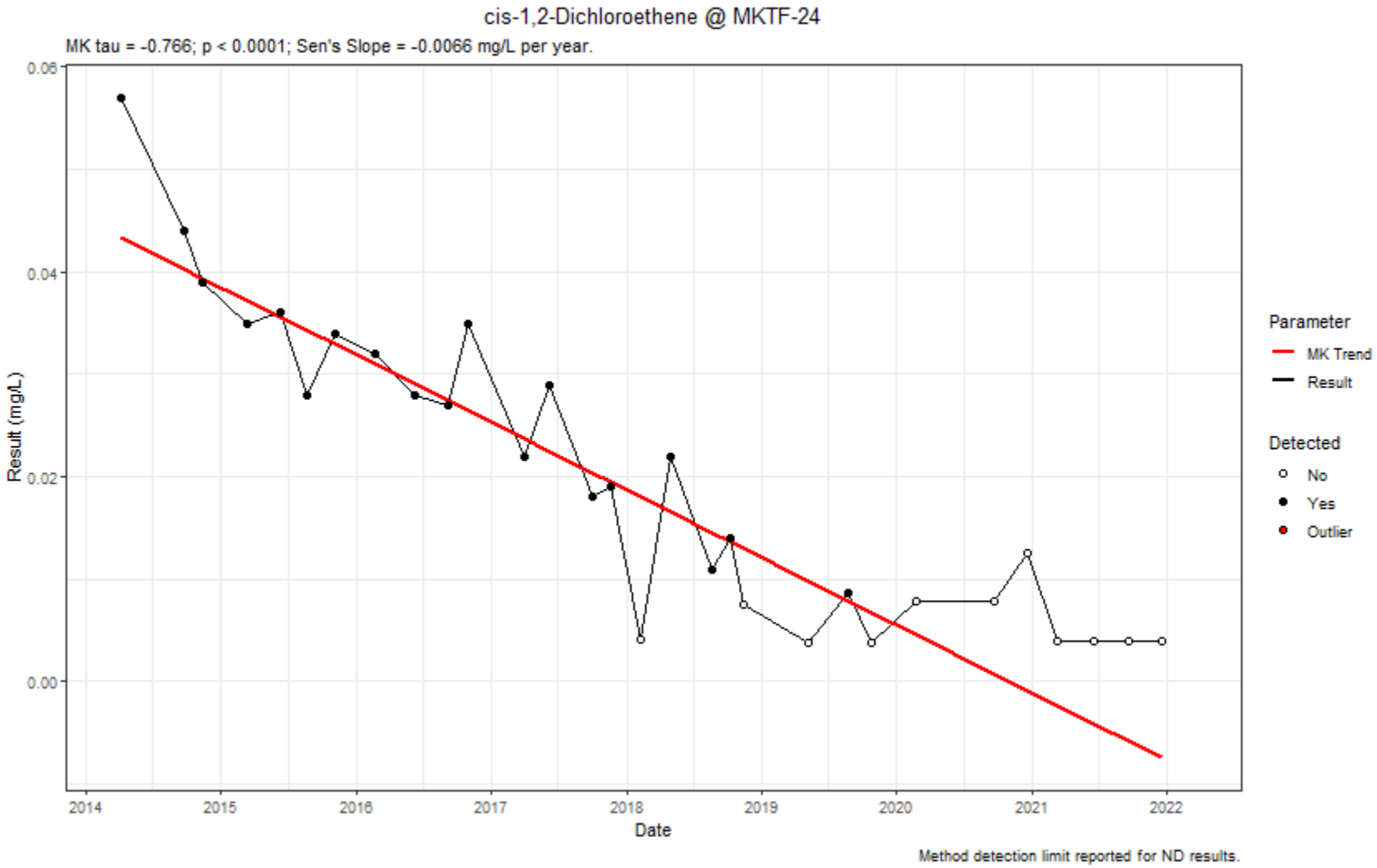
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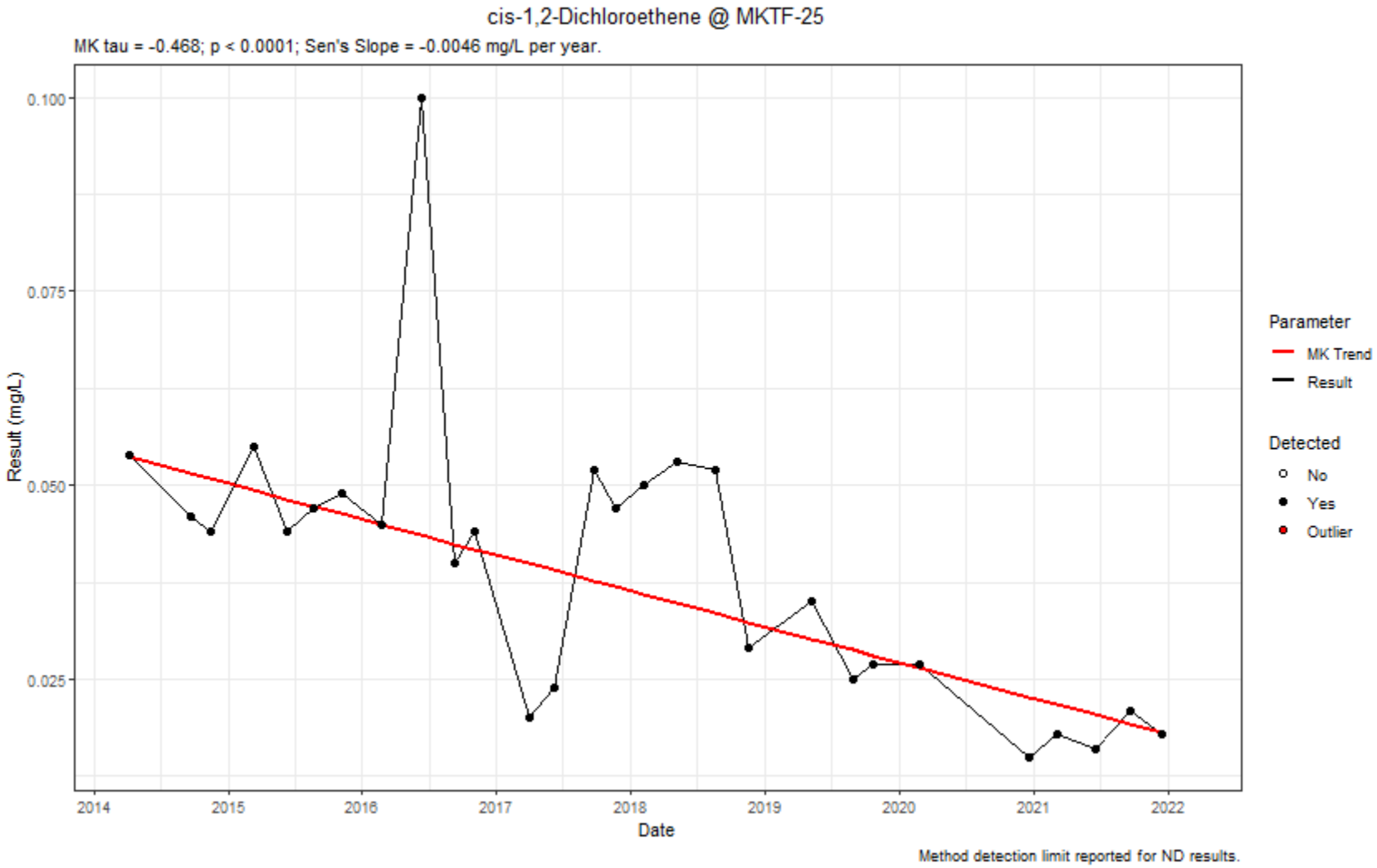
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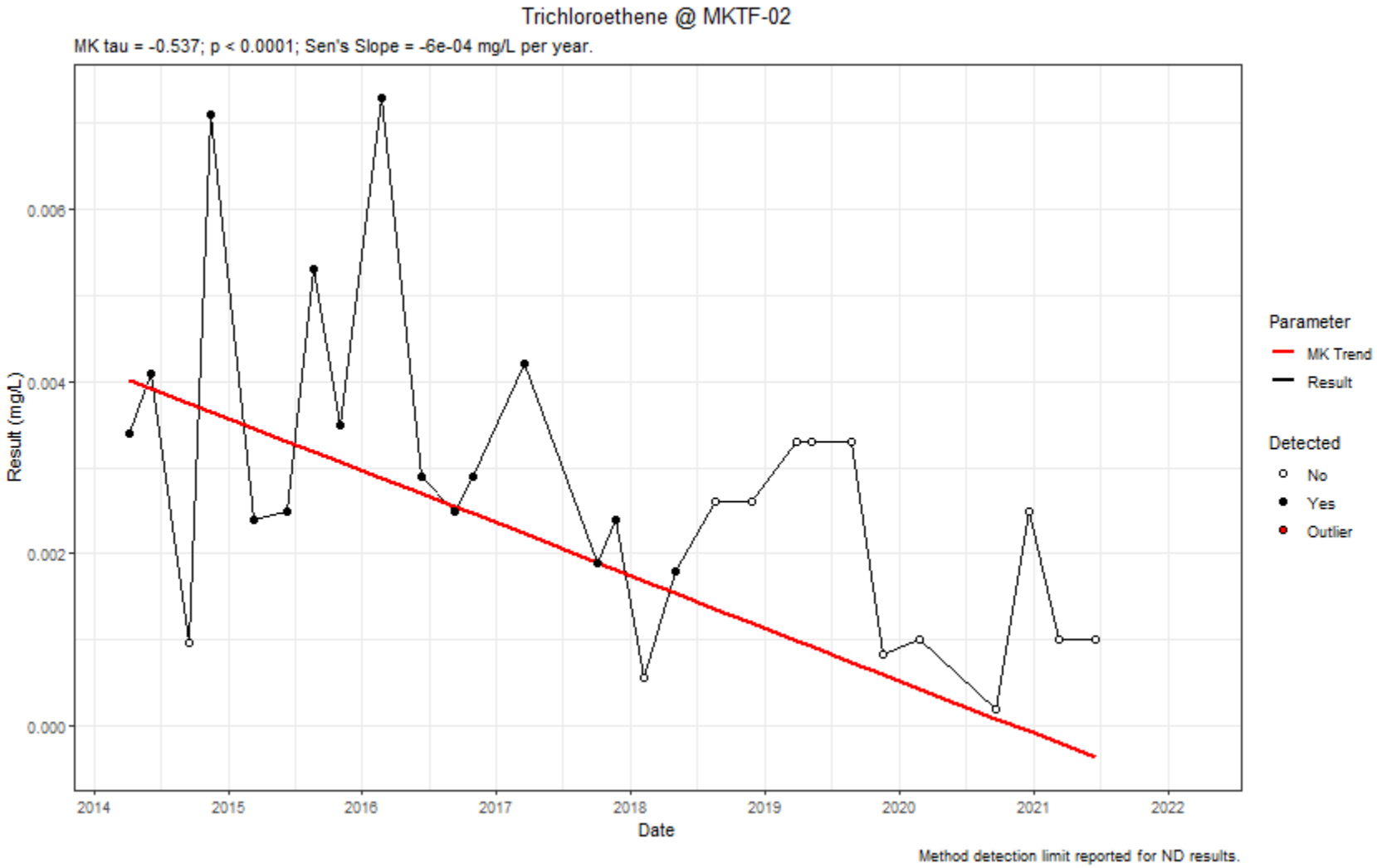
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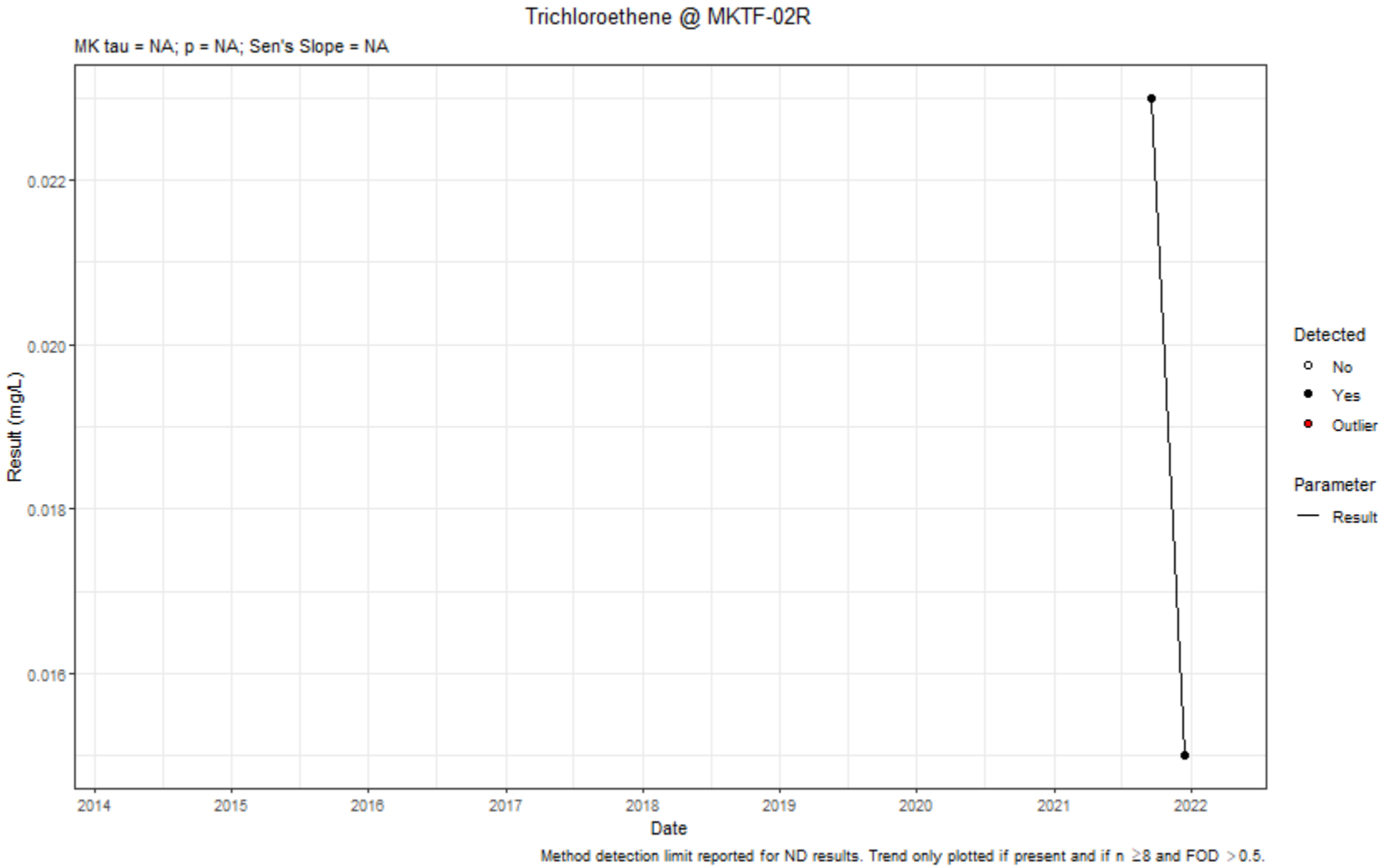
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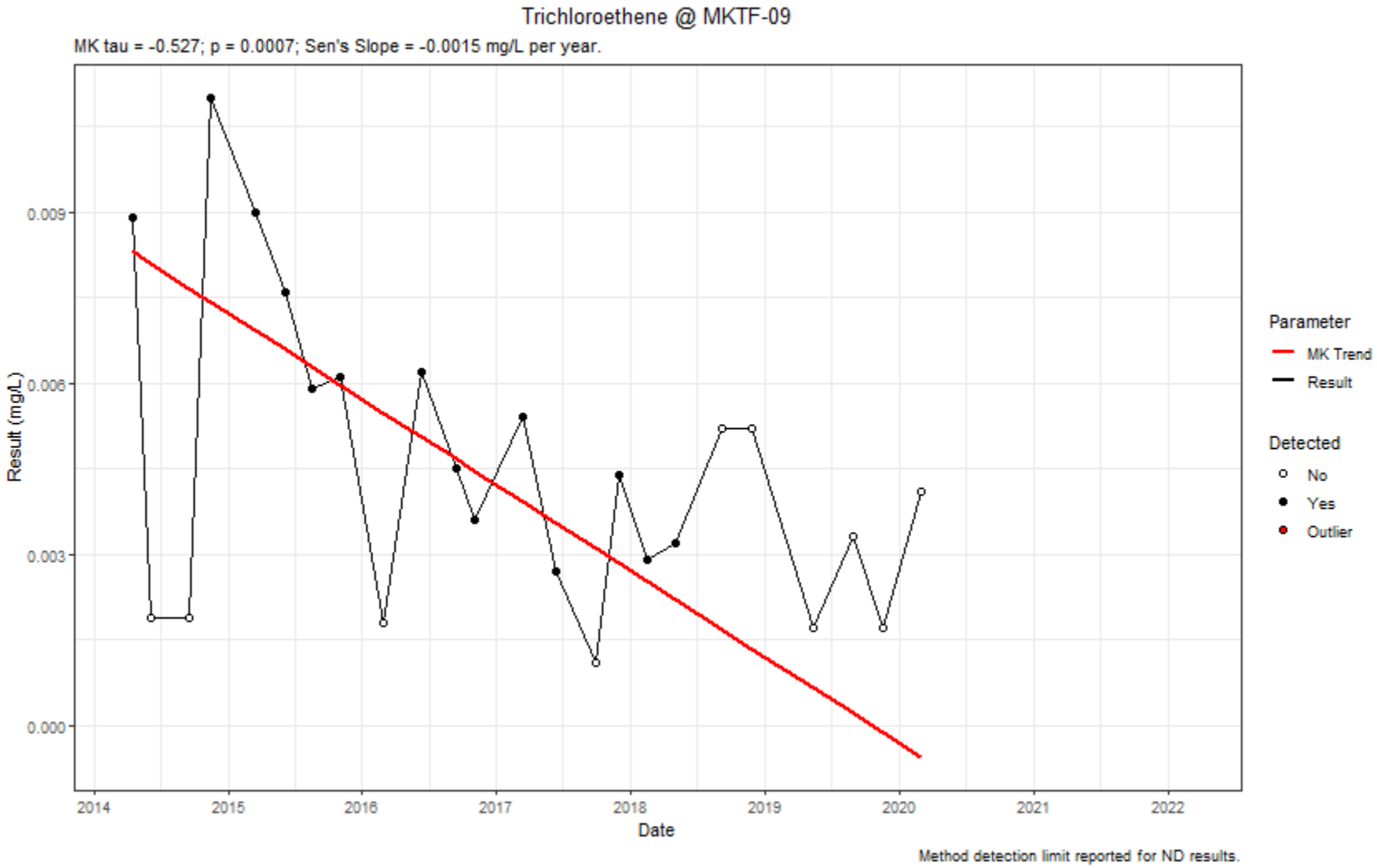
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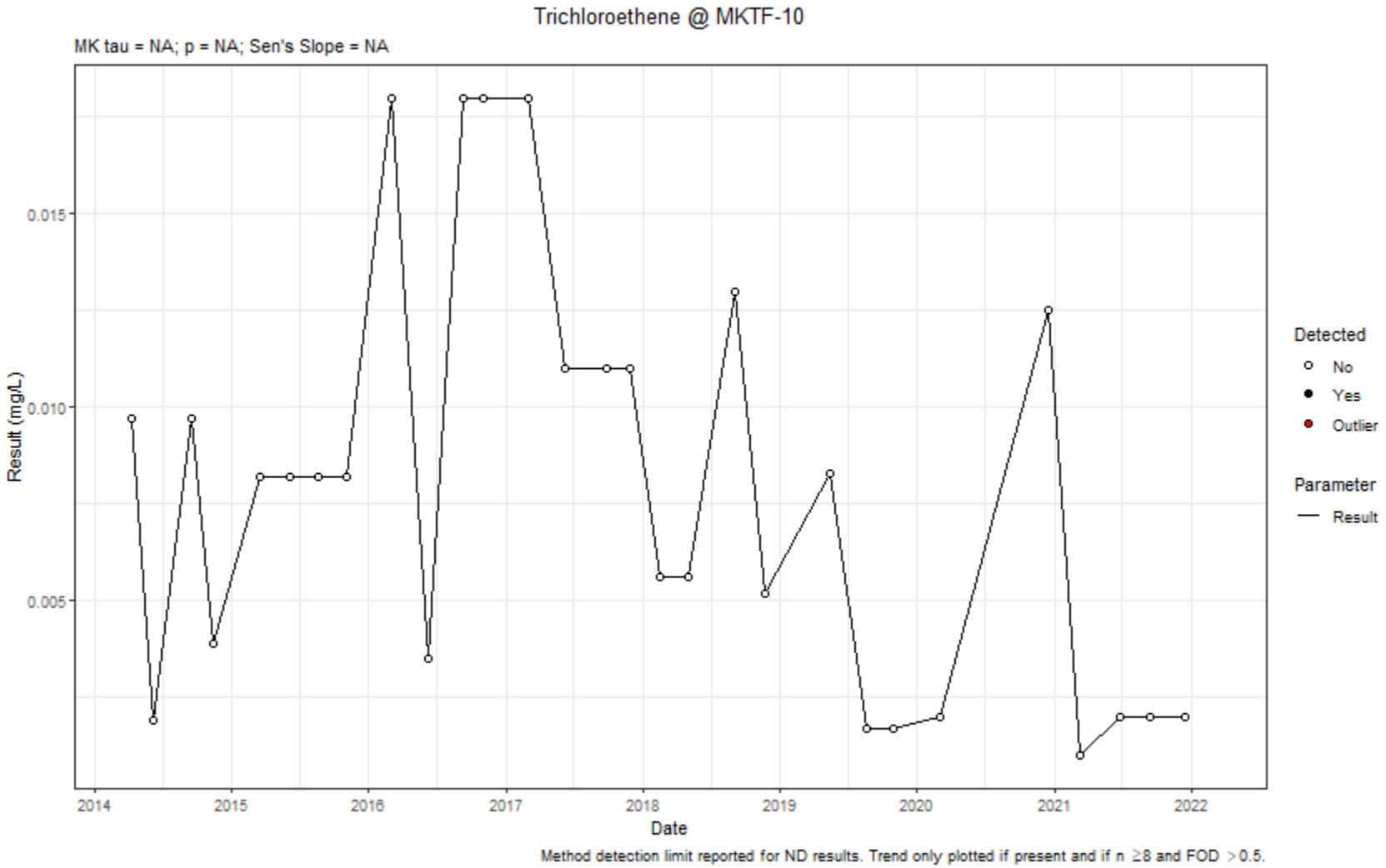
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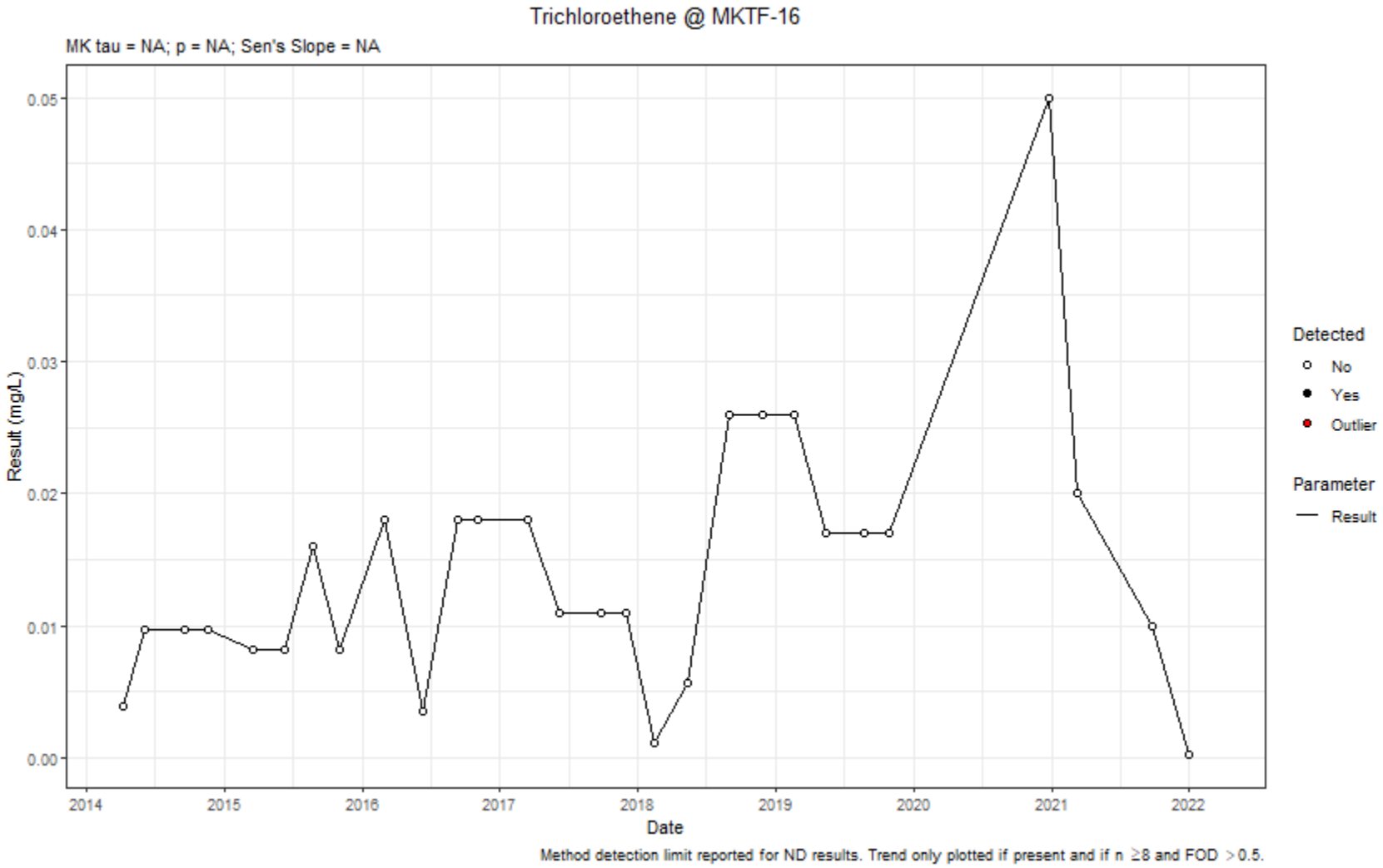
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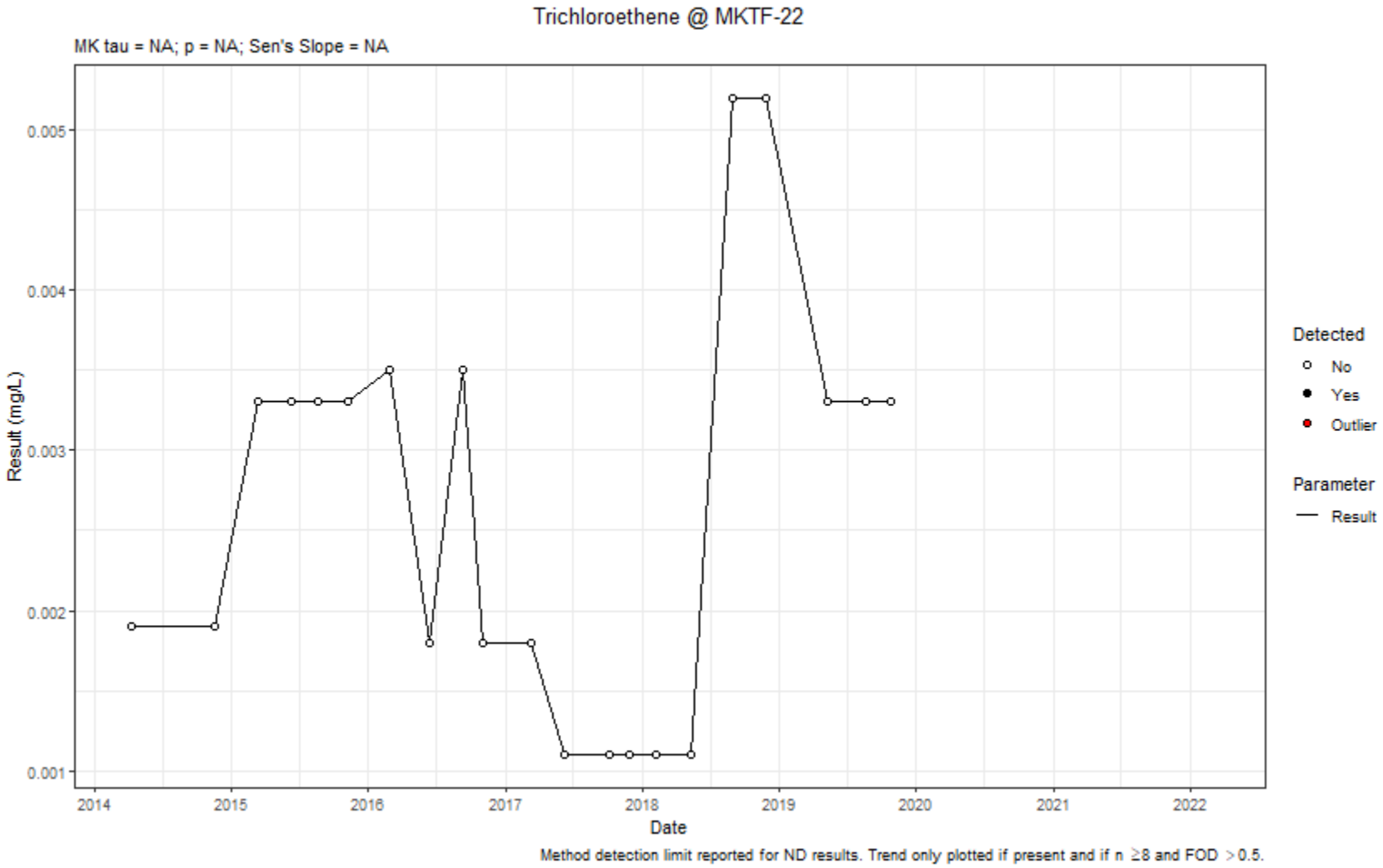
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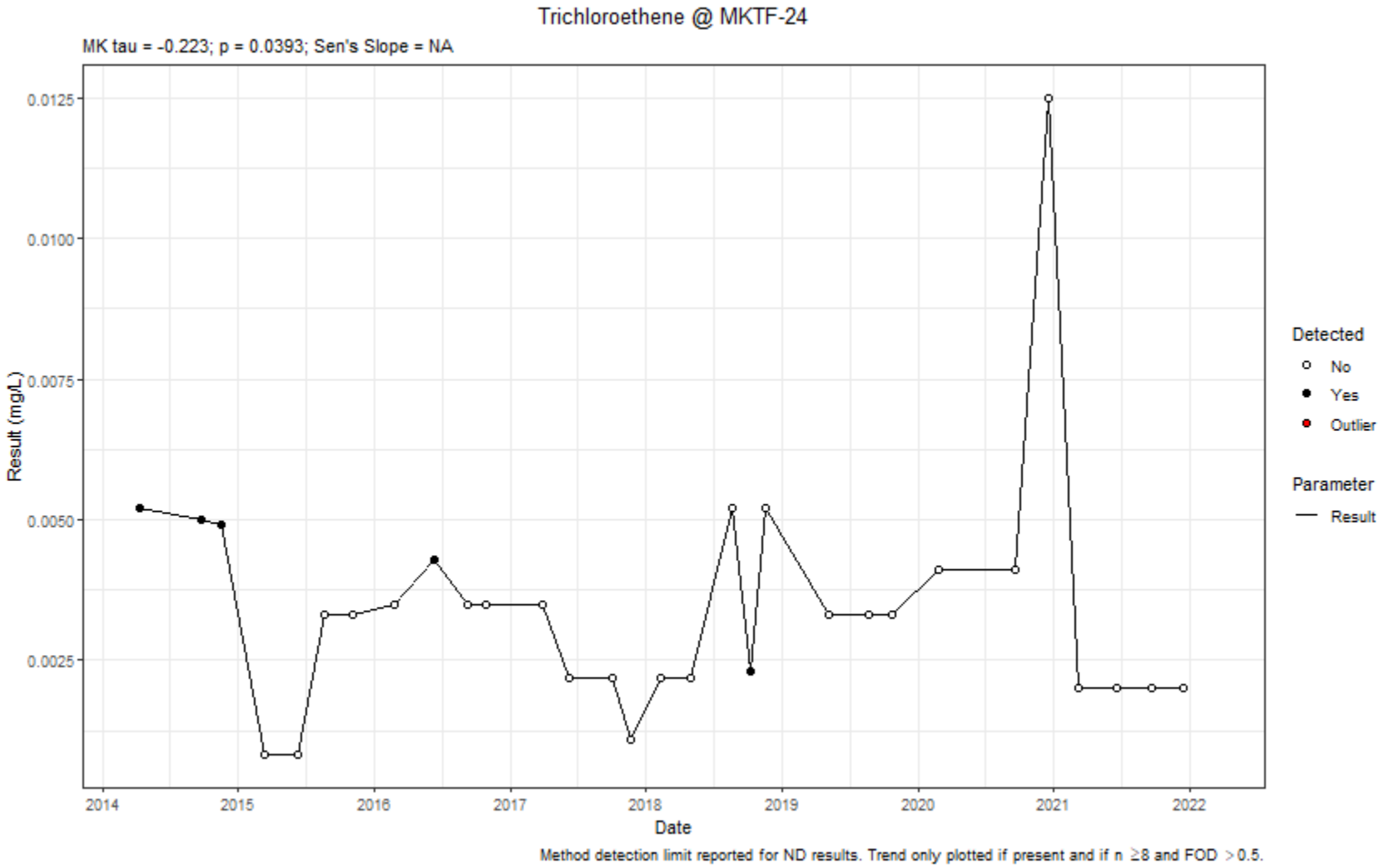
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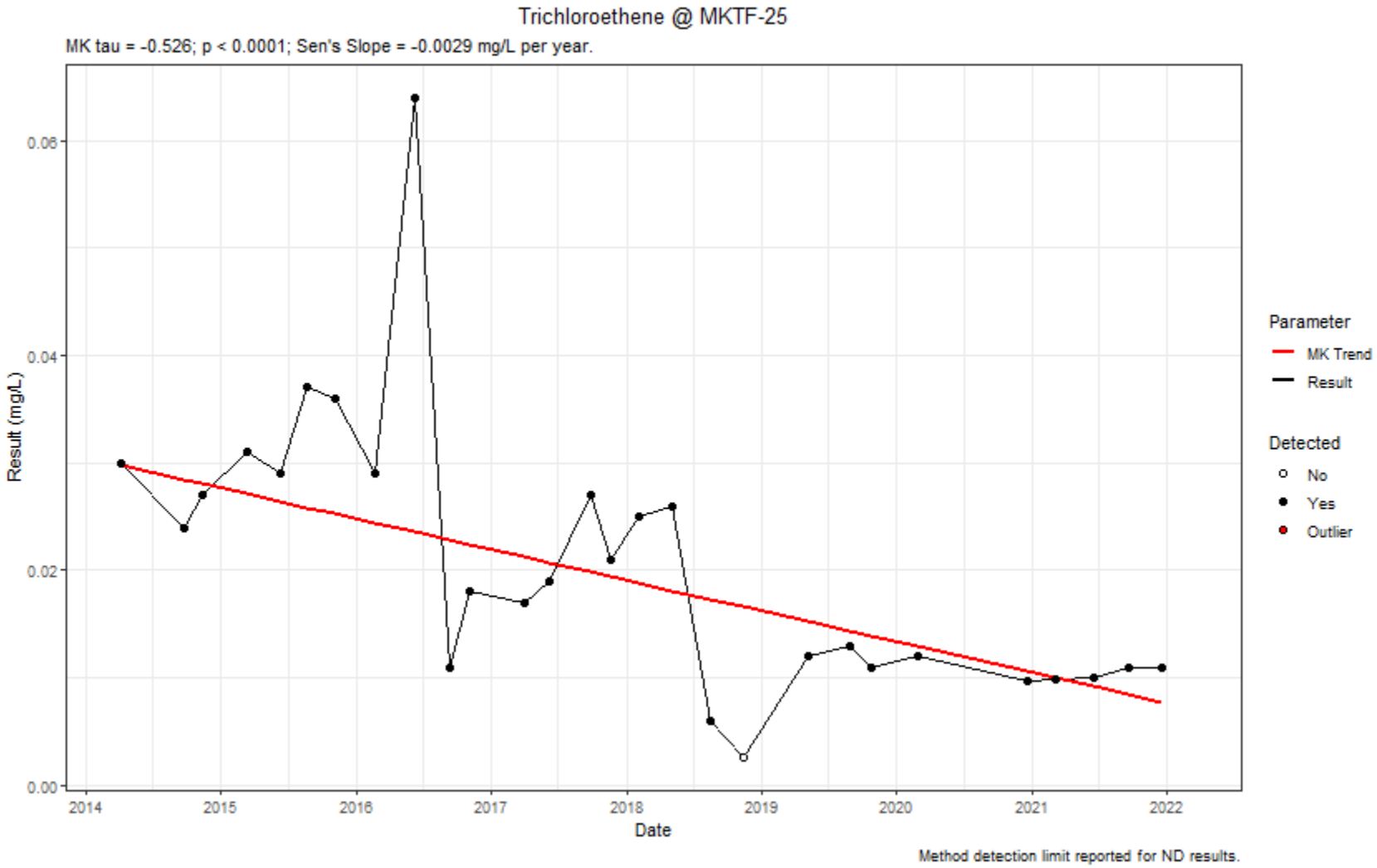
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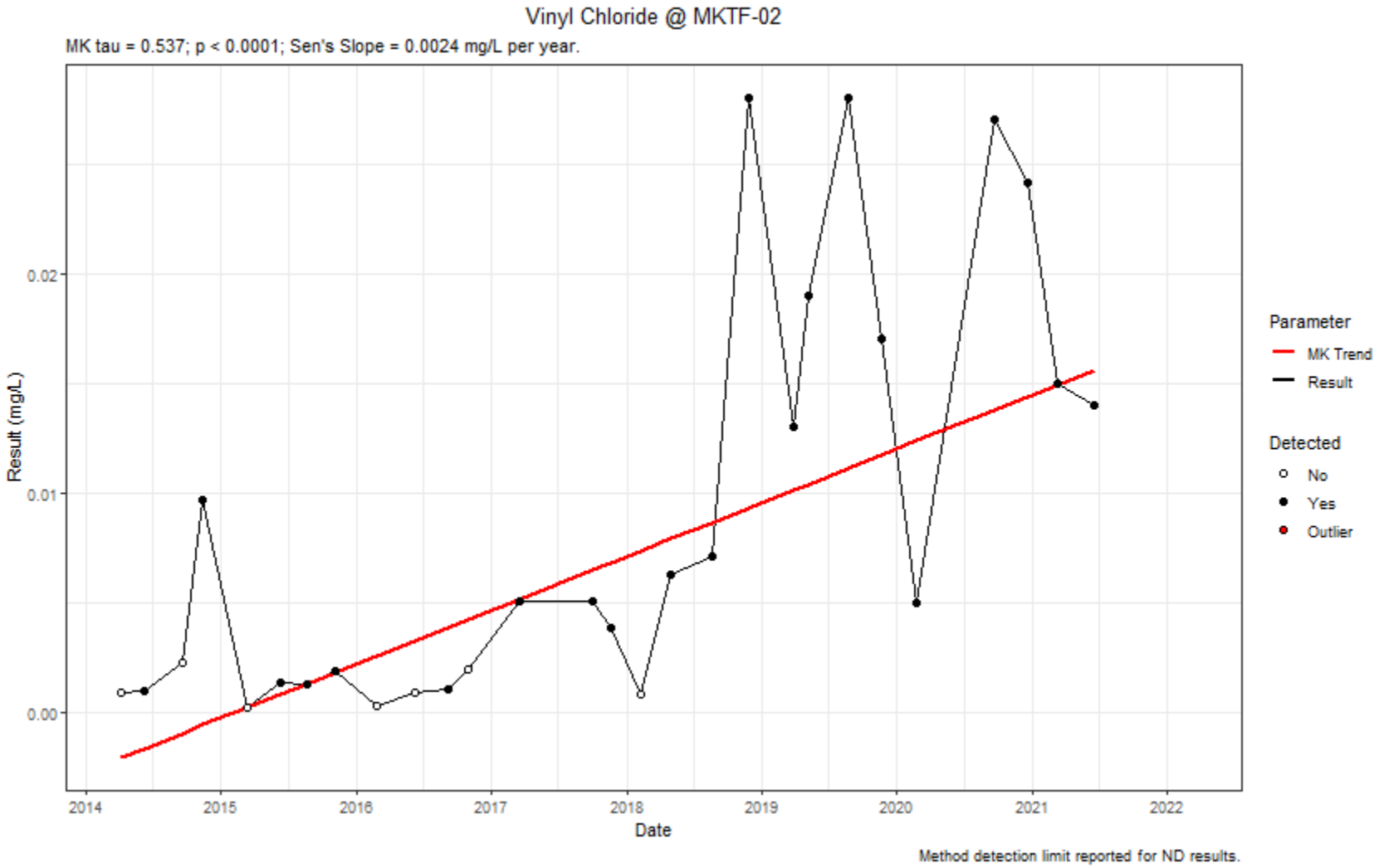
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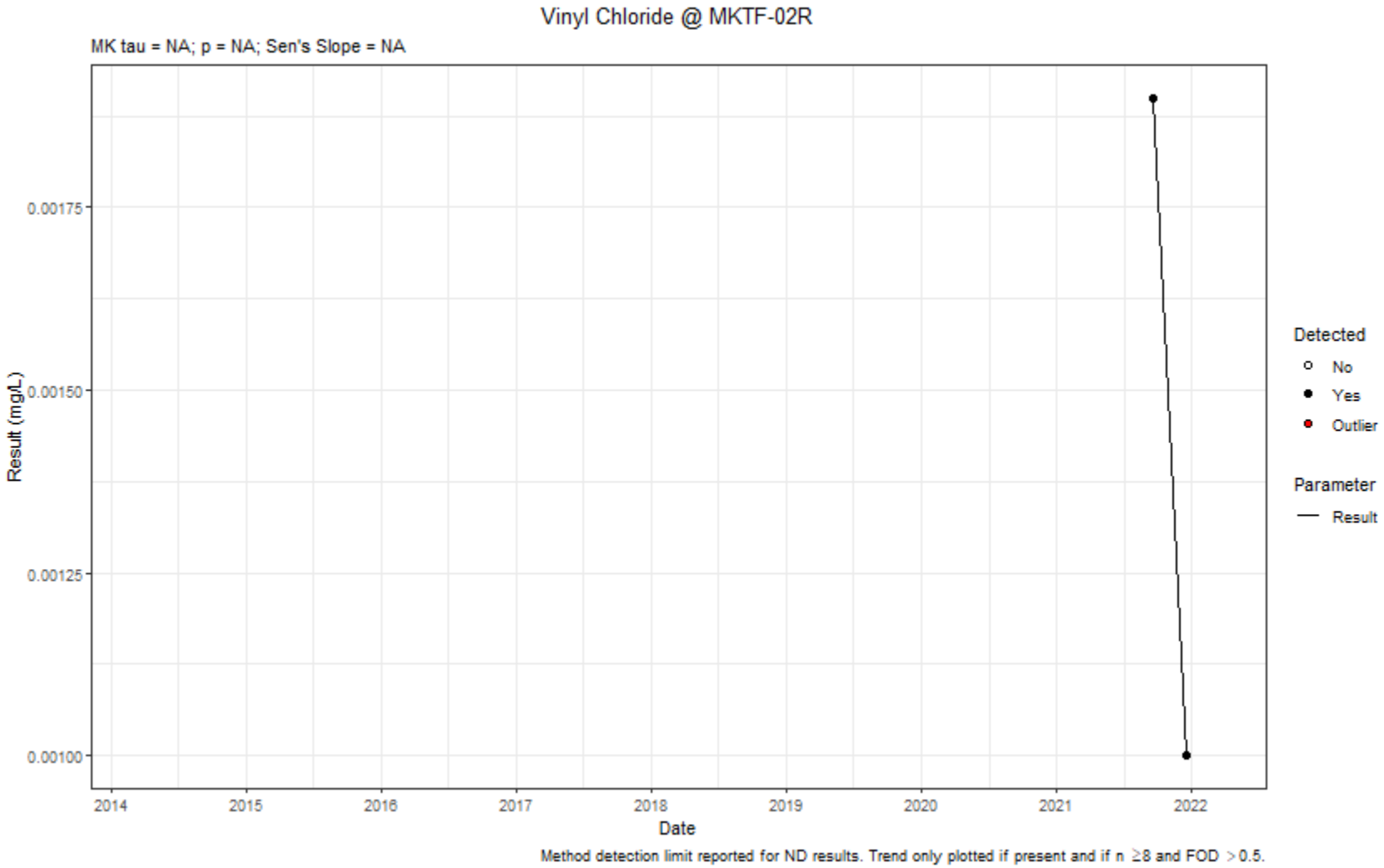
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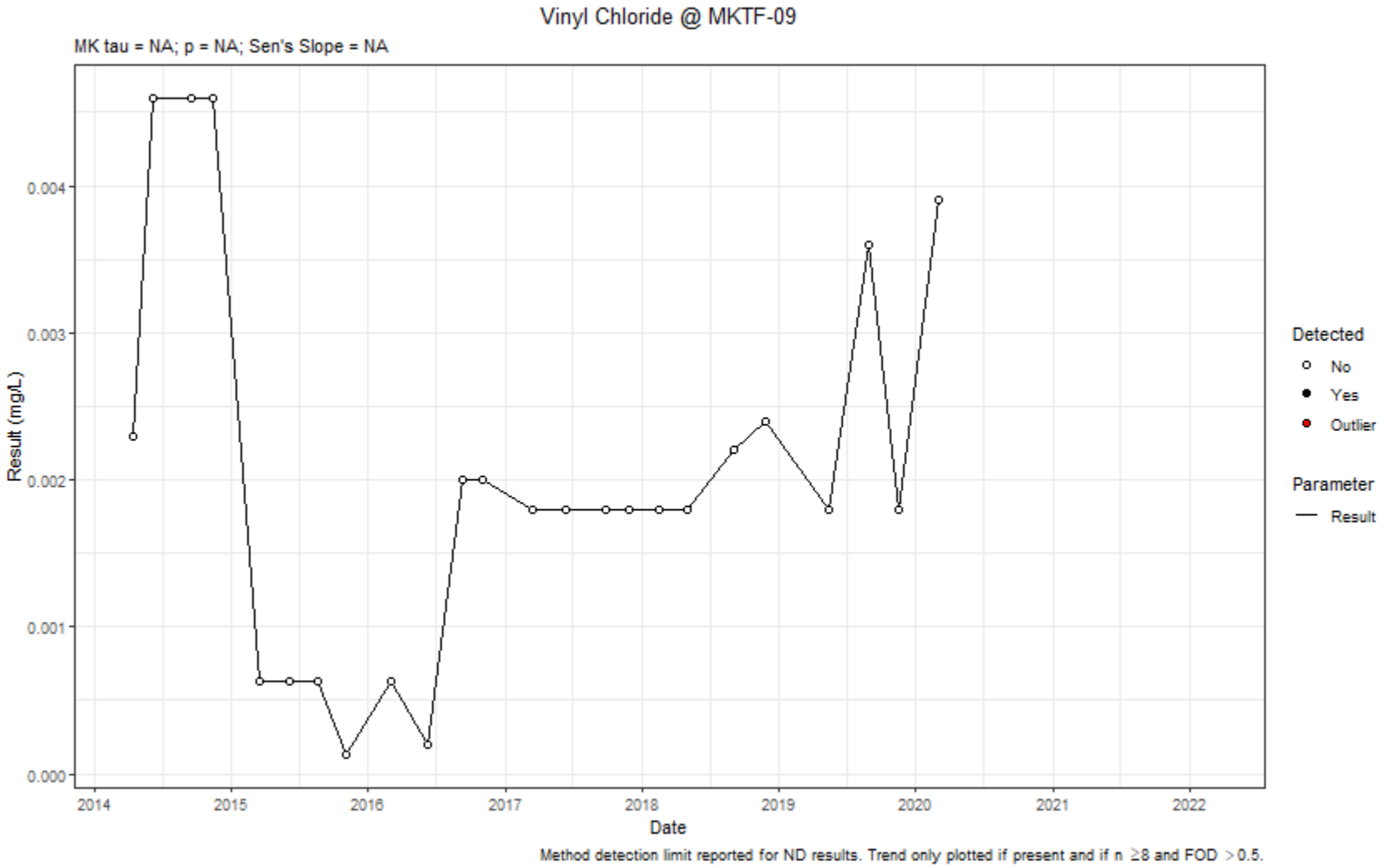
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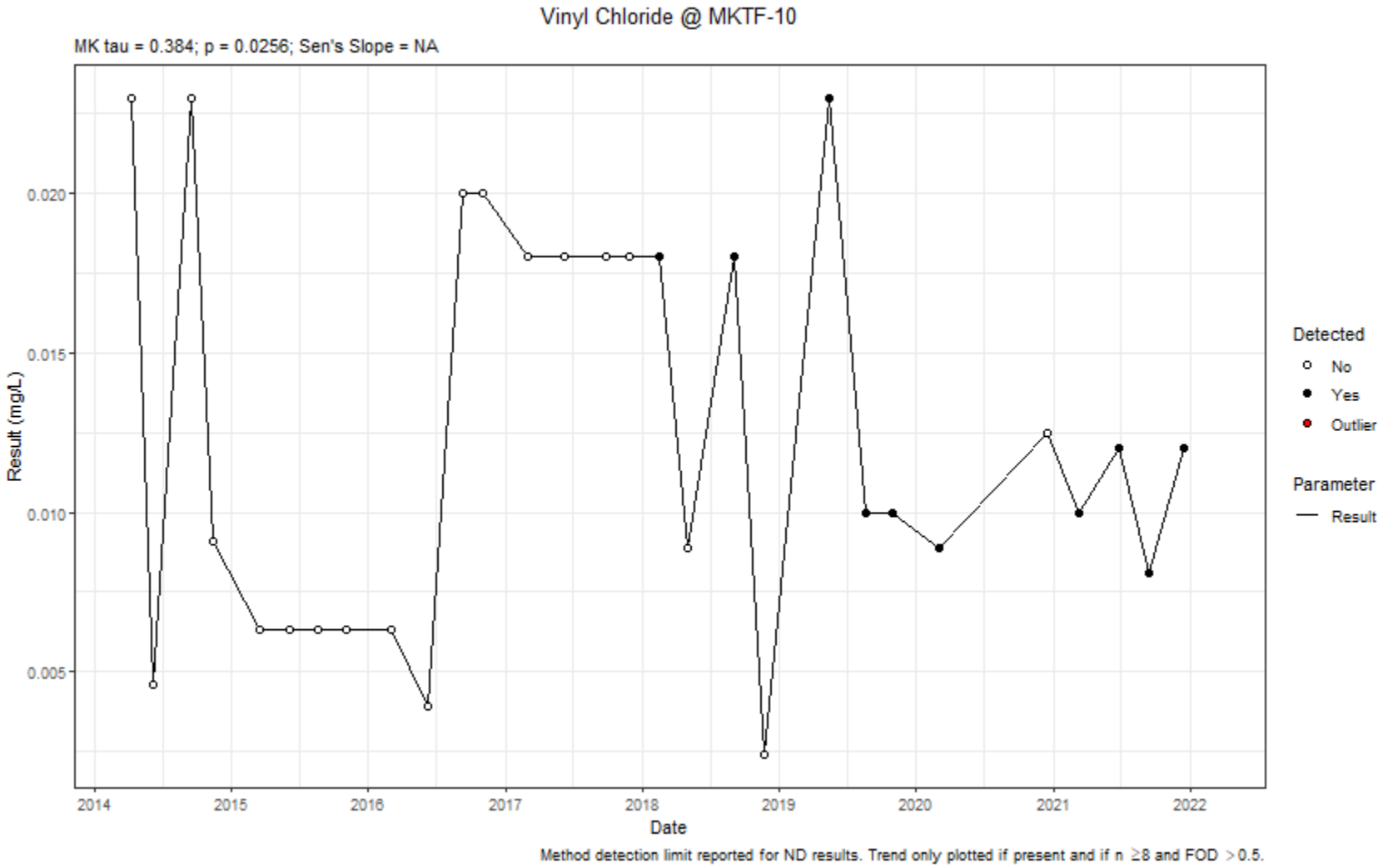
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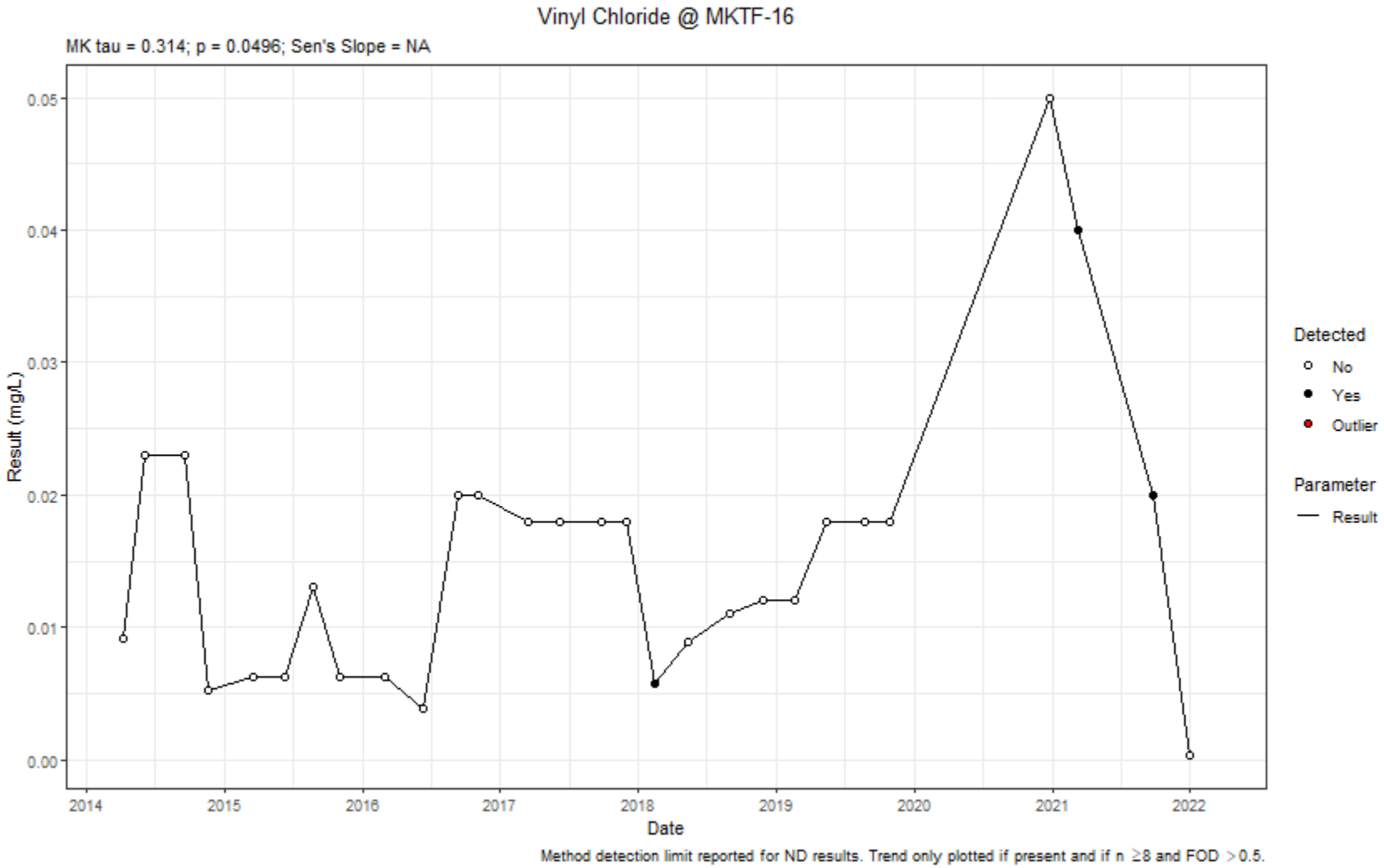
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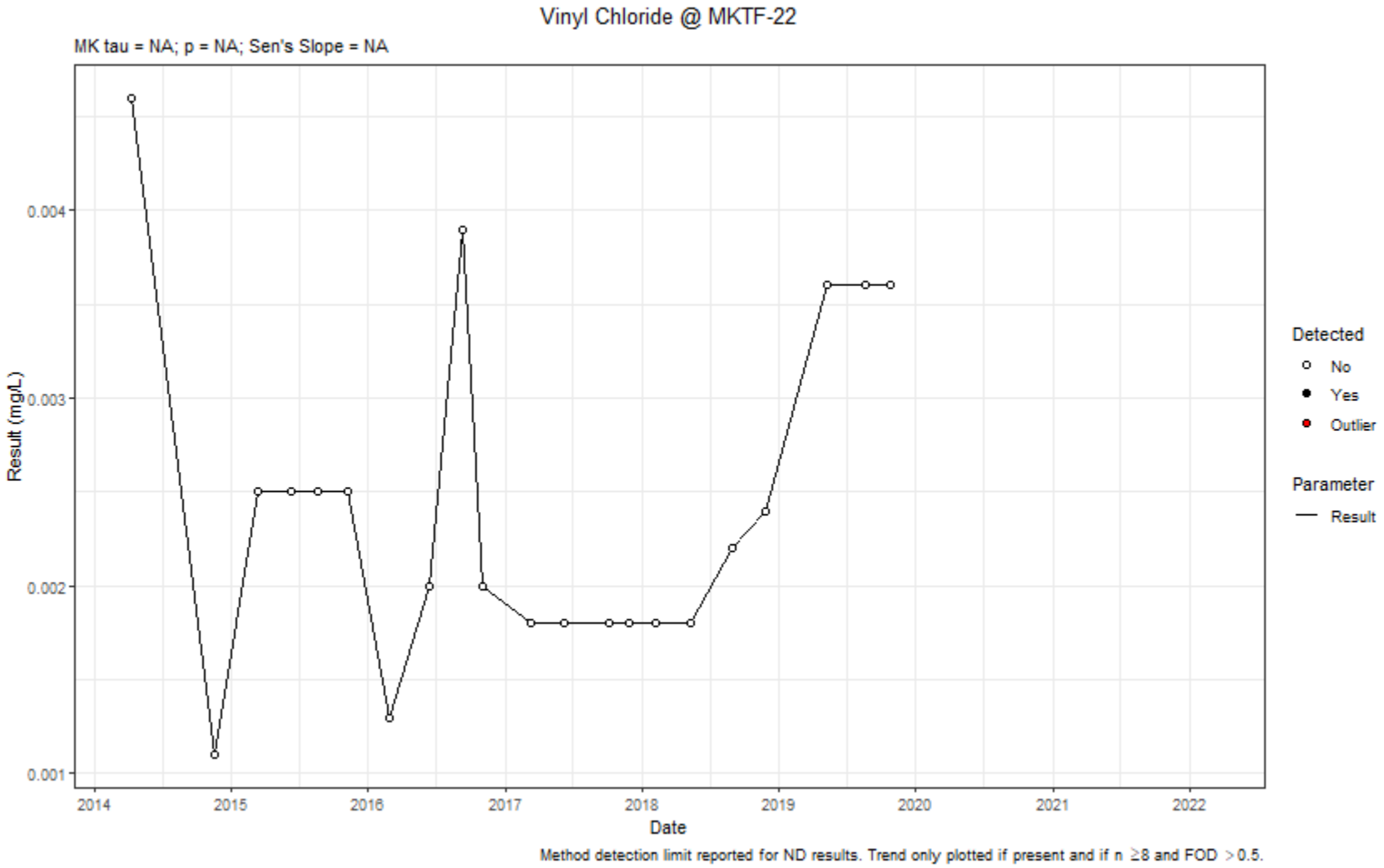
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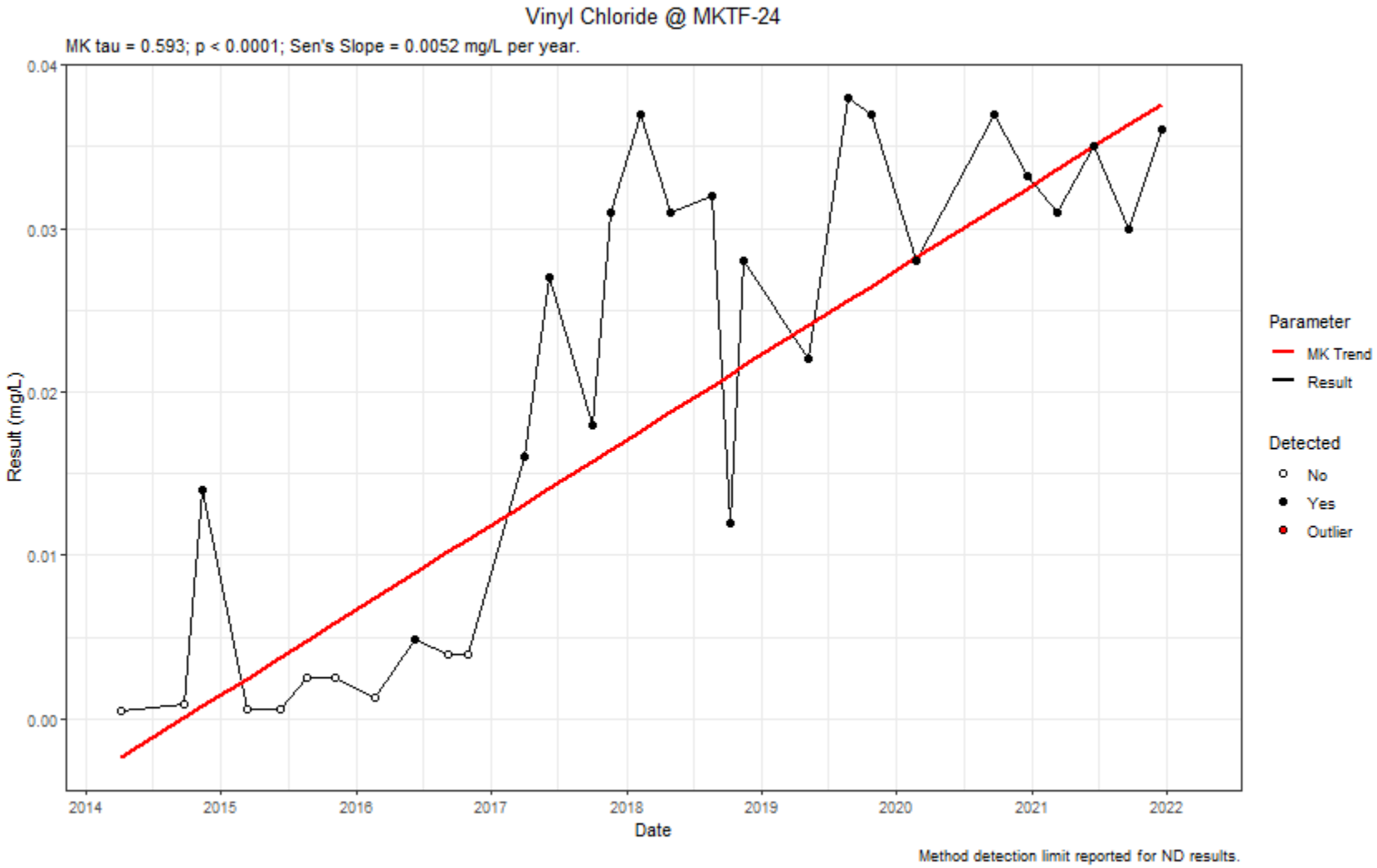
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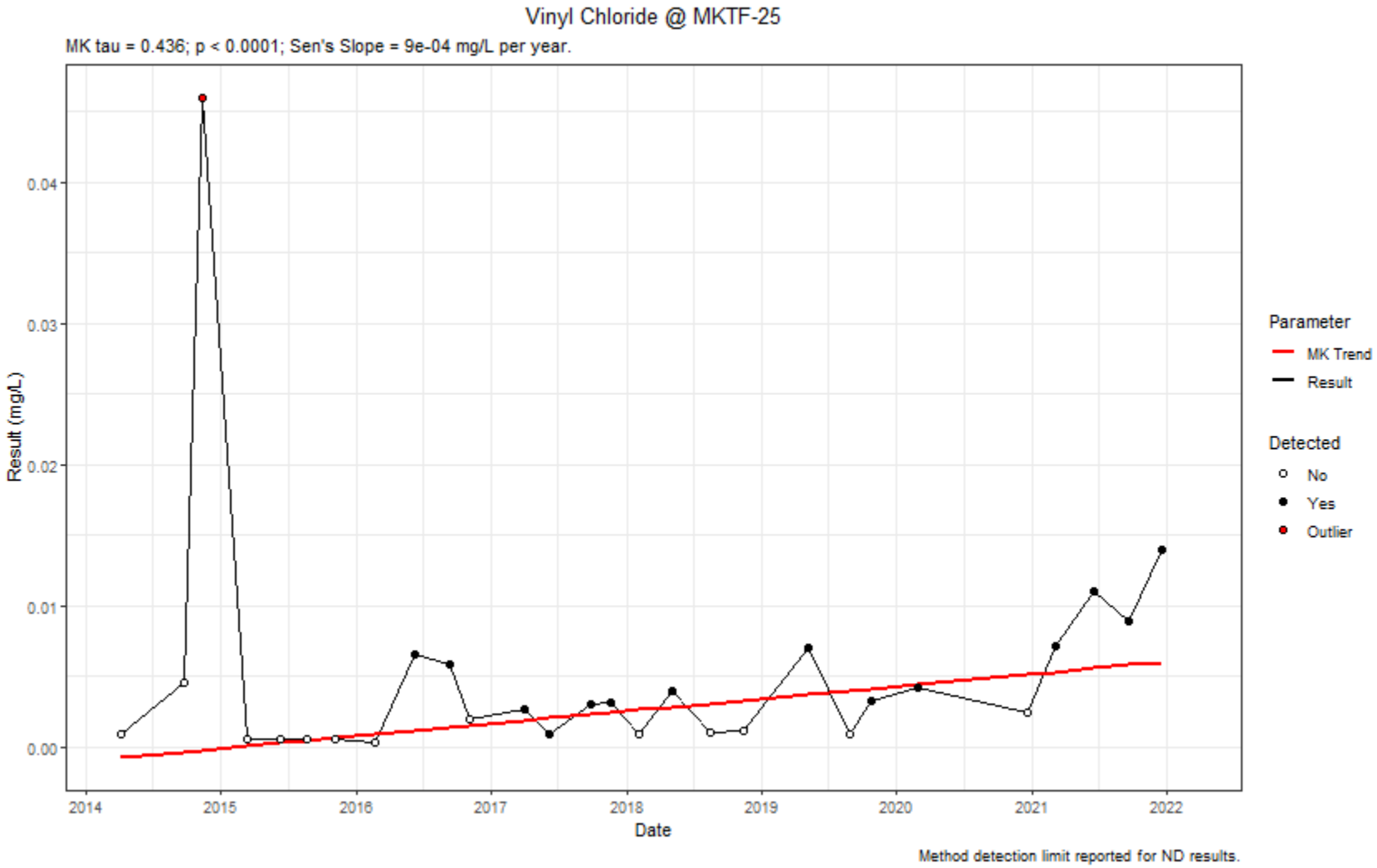
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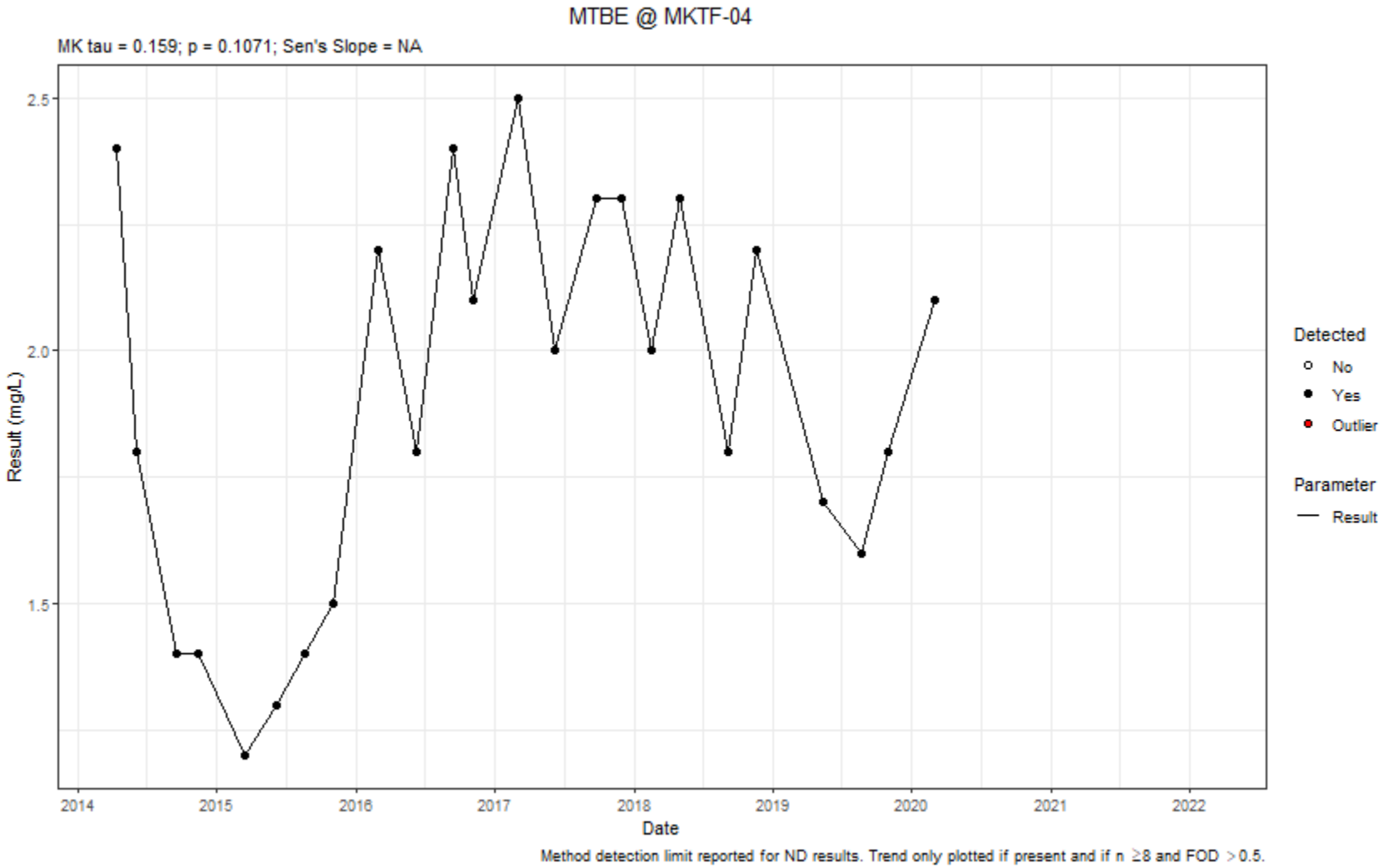


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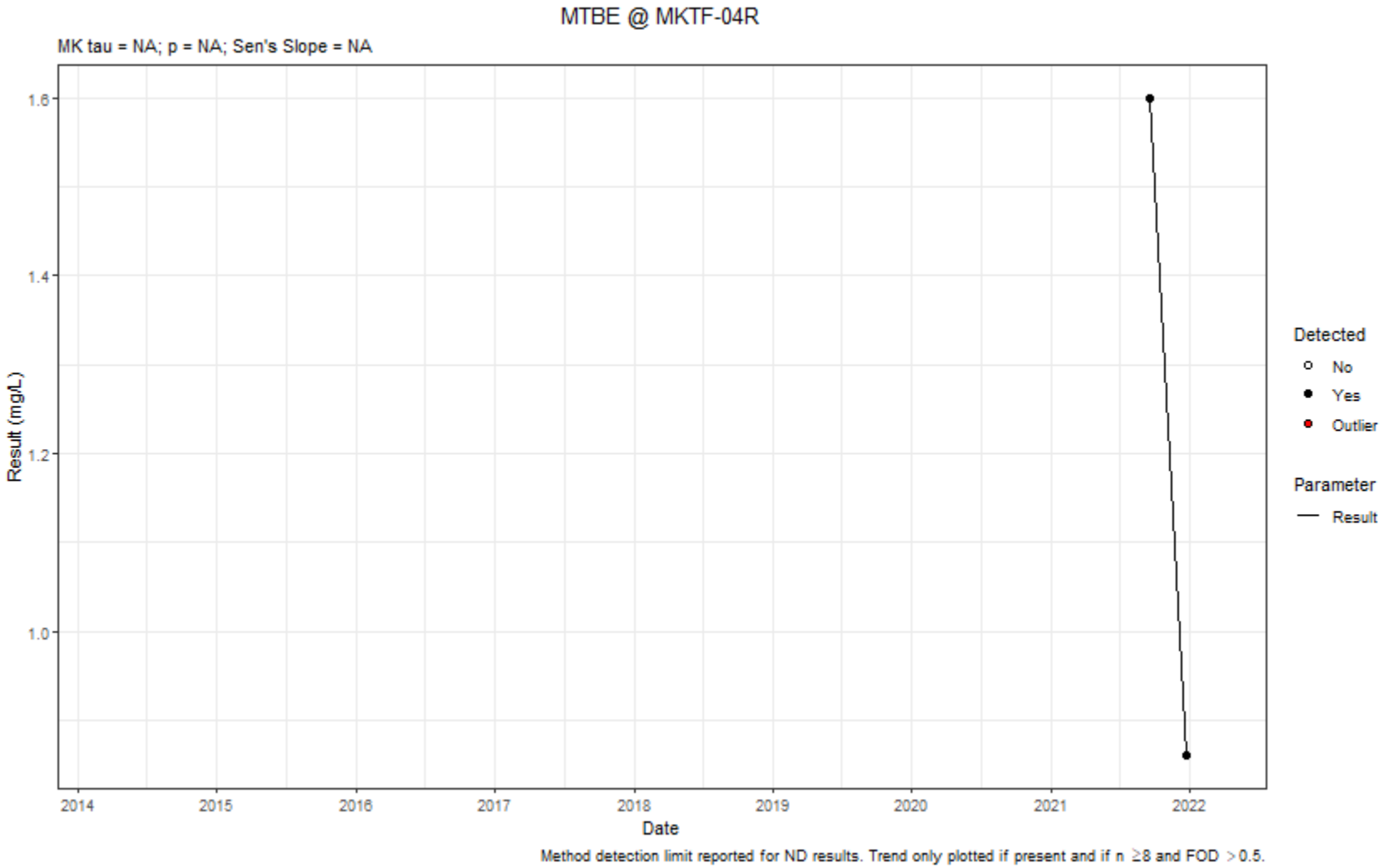


Appendix D – MTBE Time Series Plots

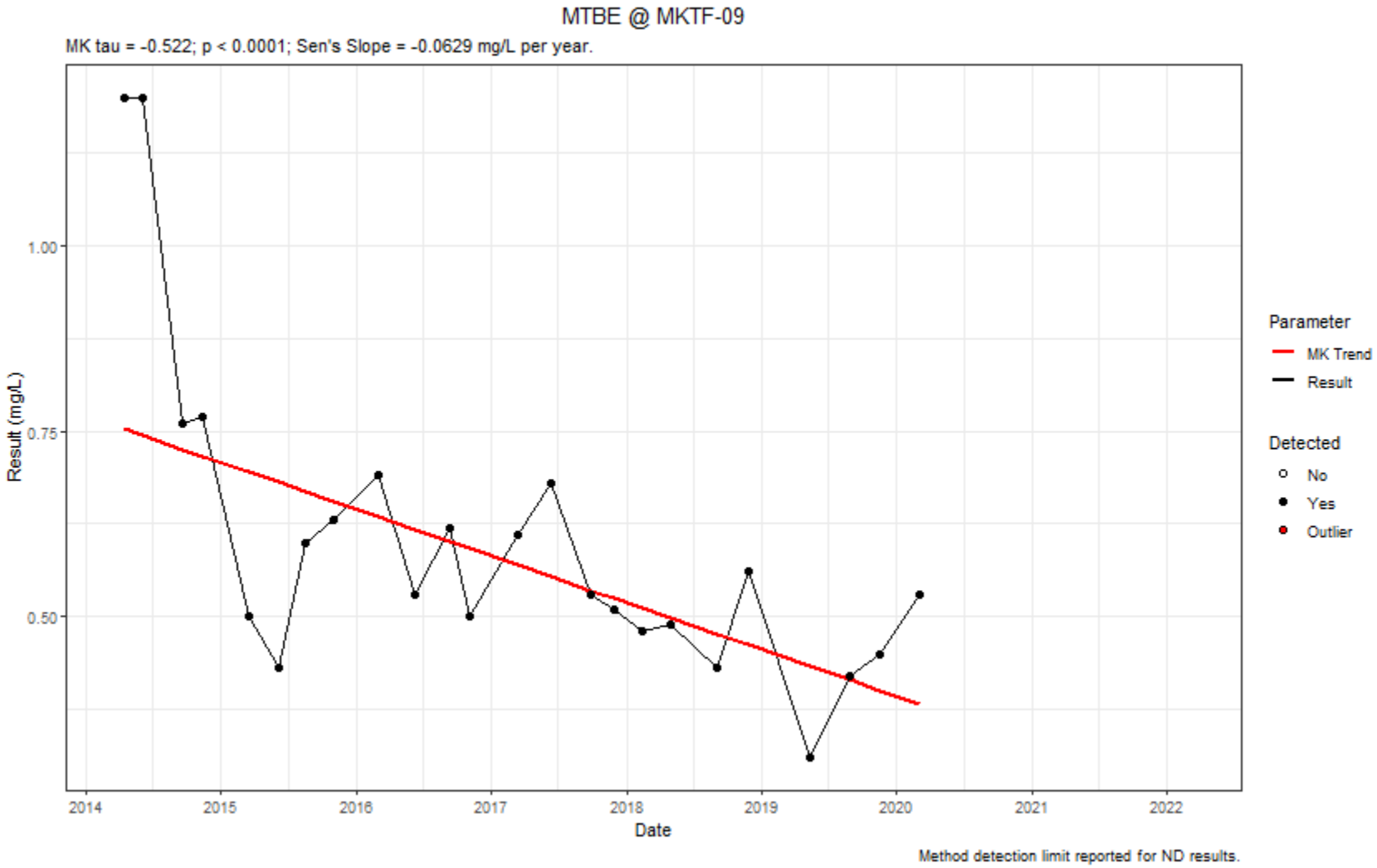
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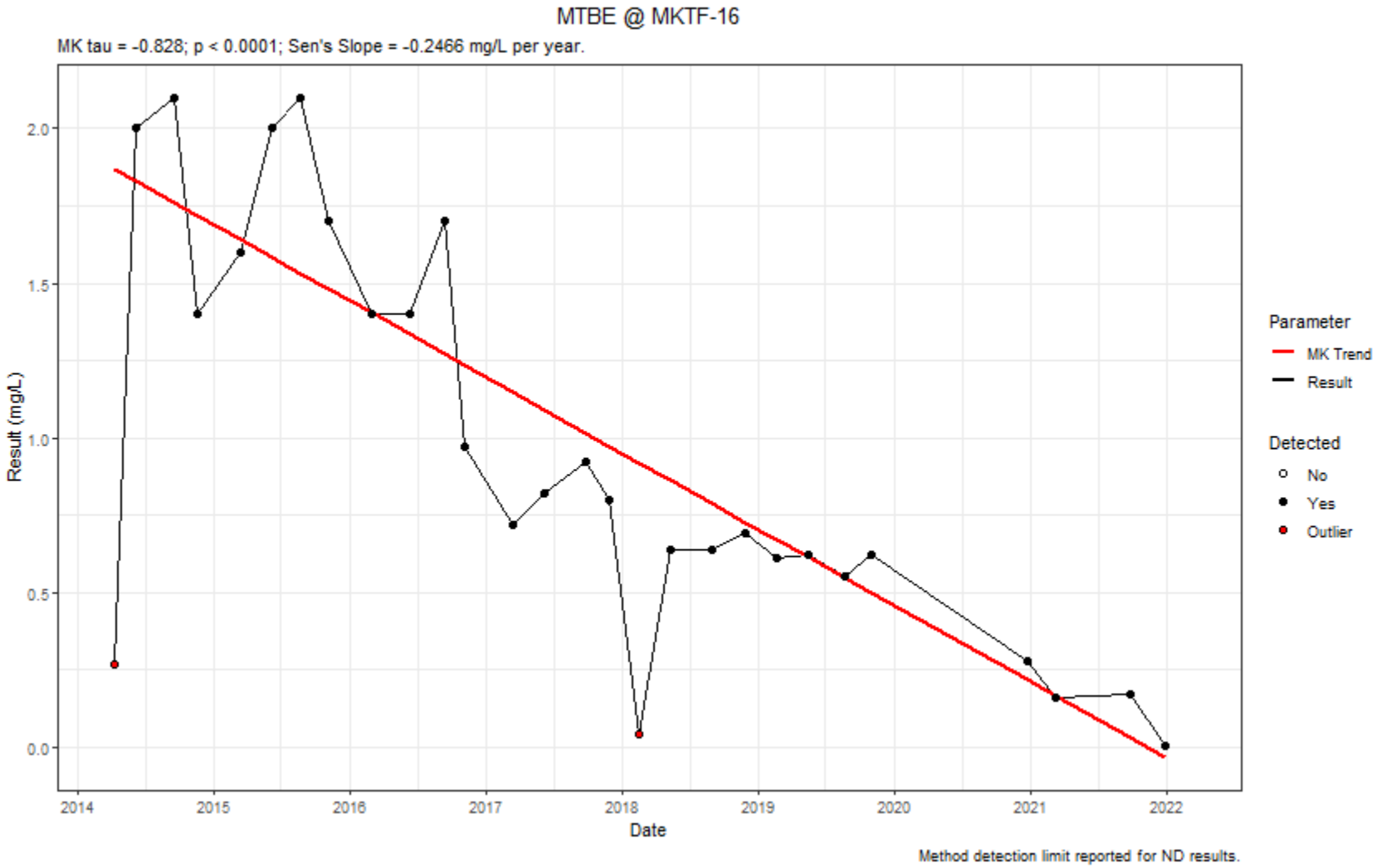
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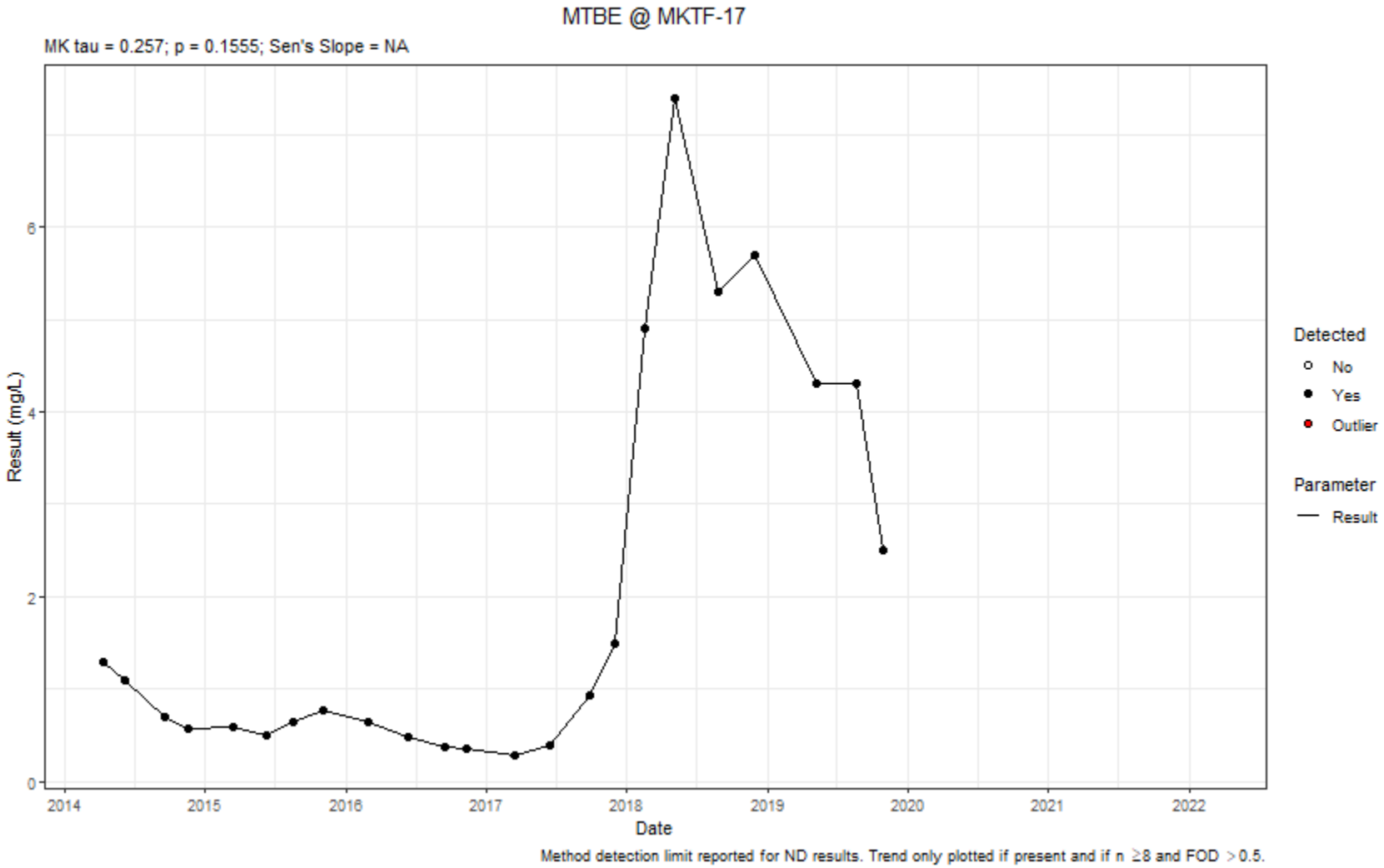
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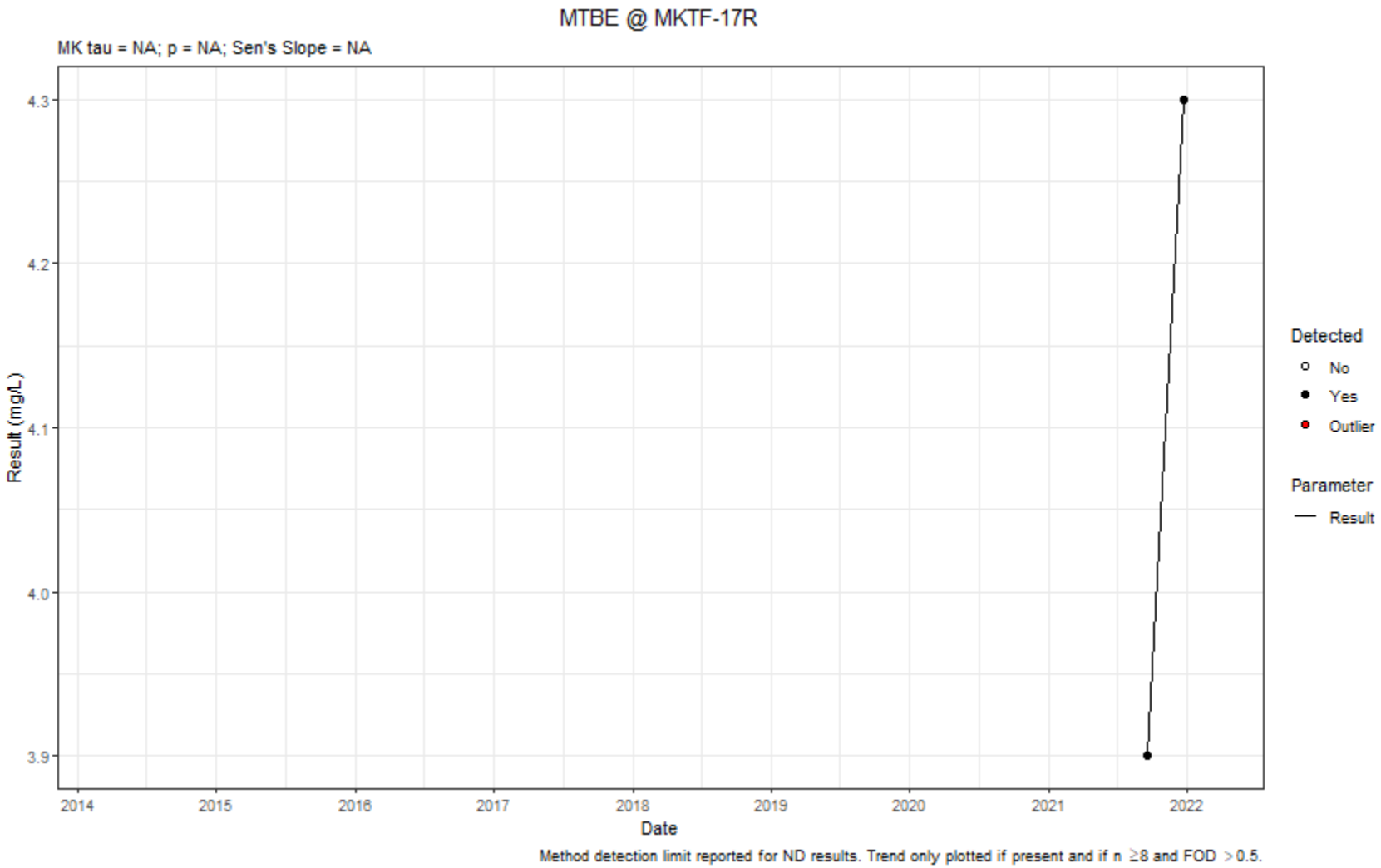
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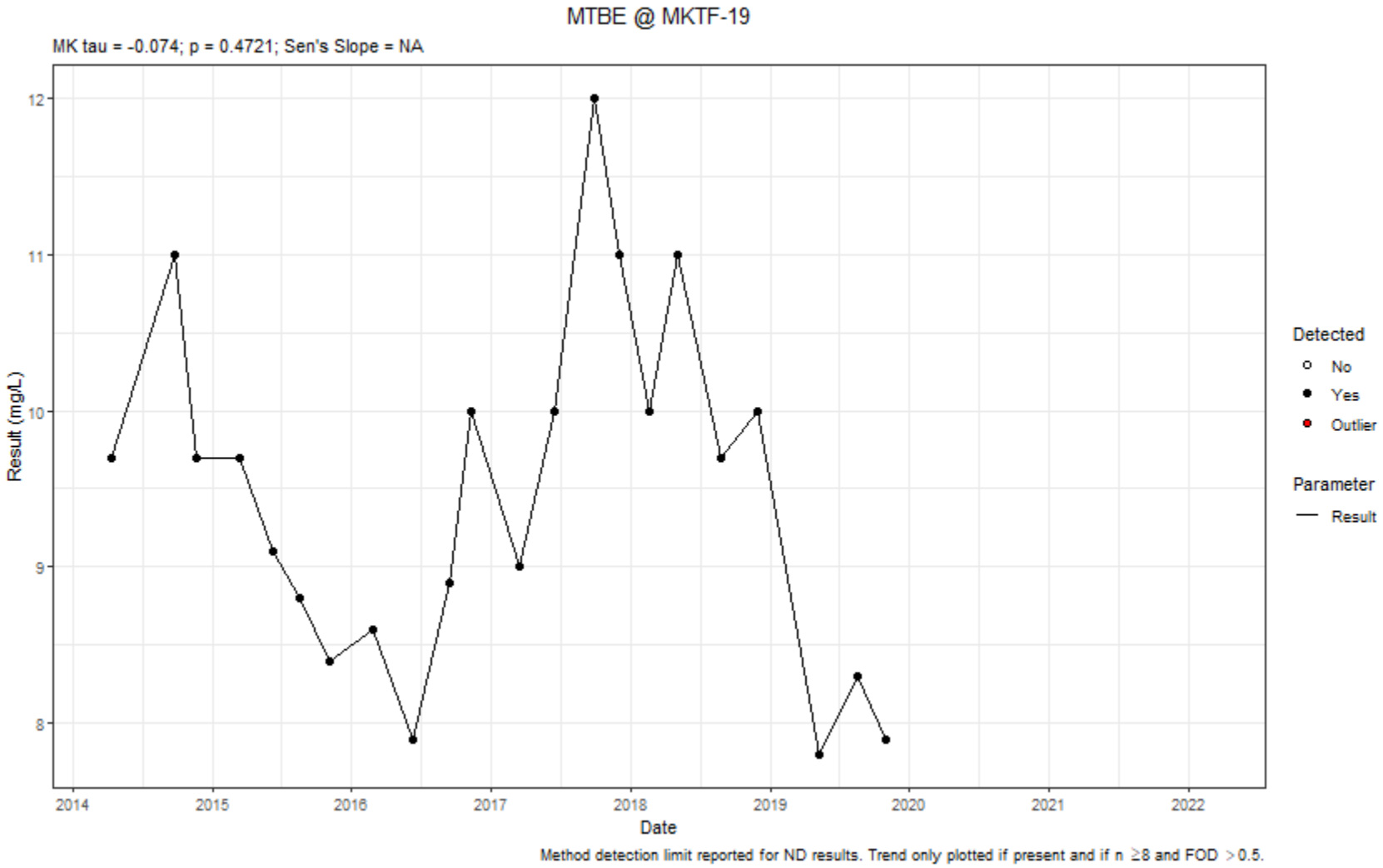
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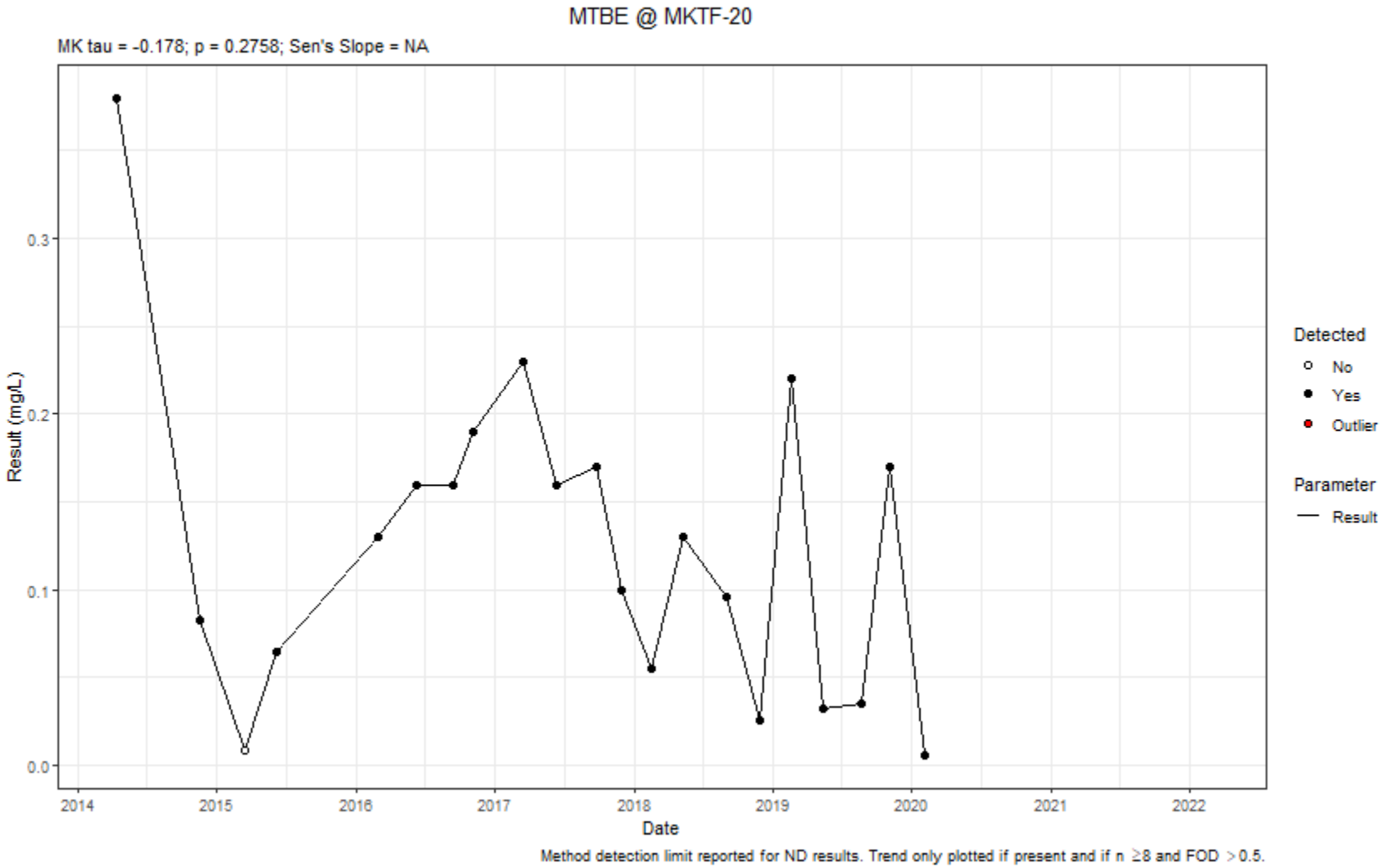
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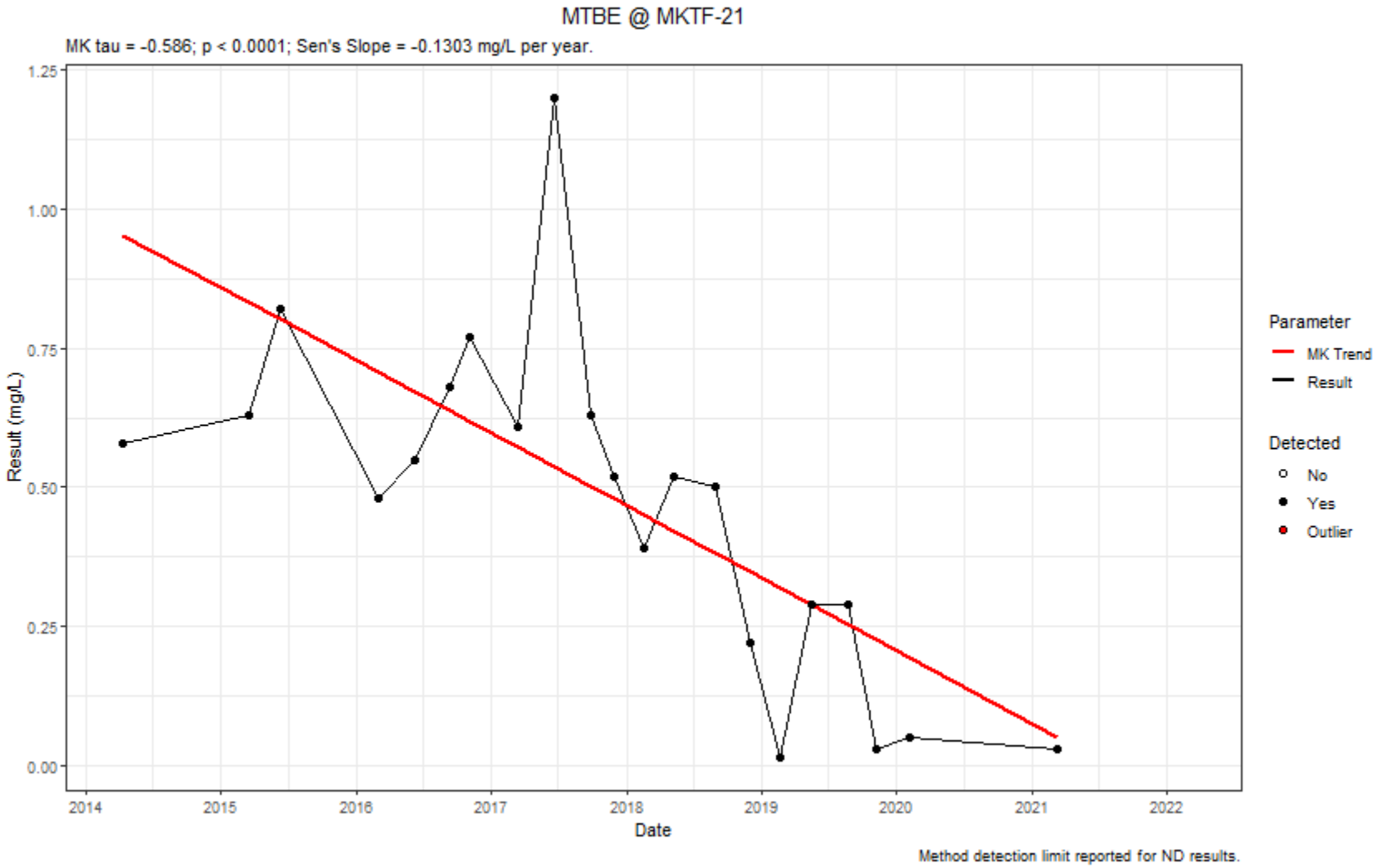
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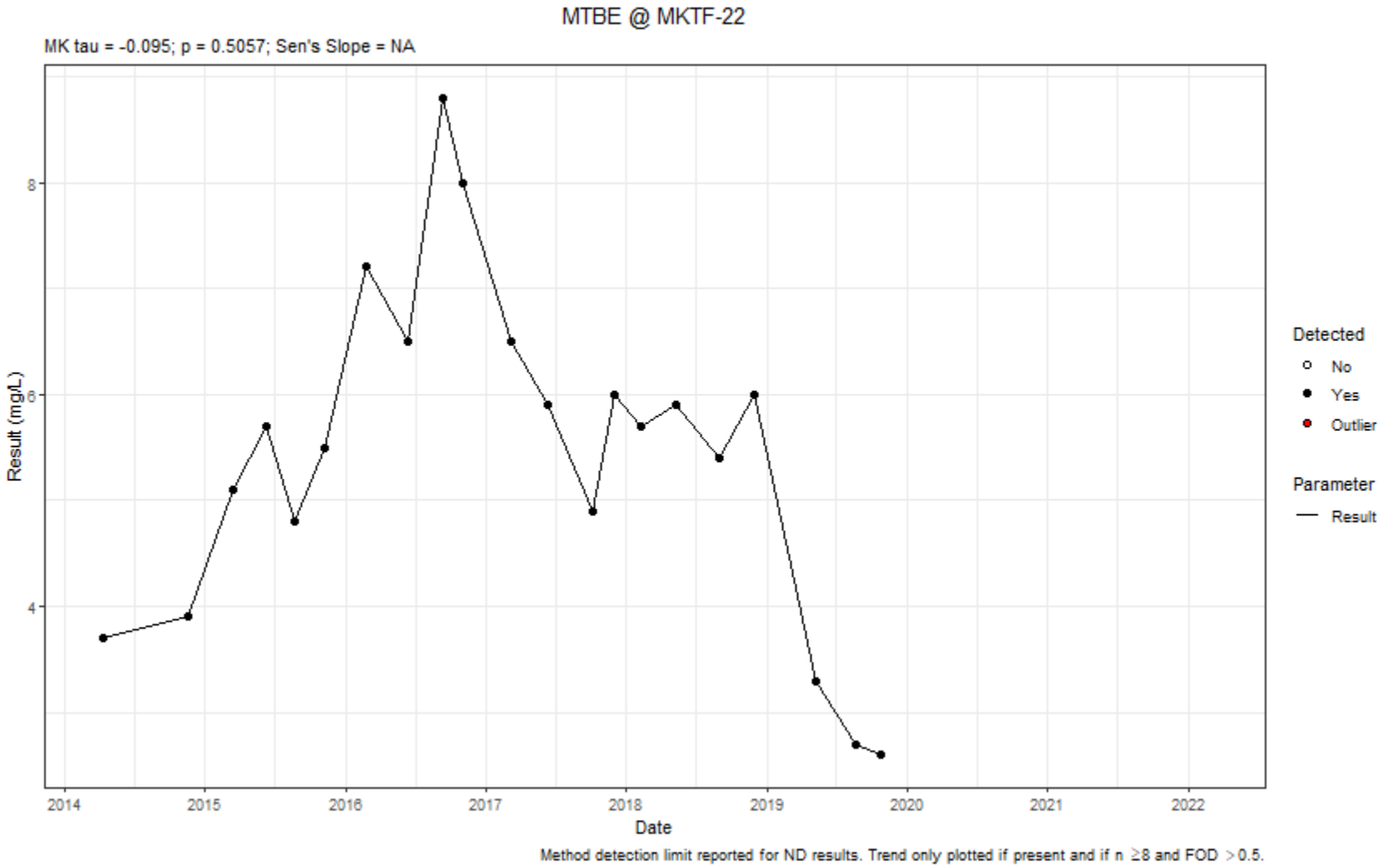
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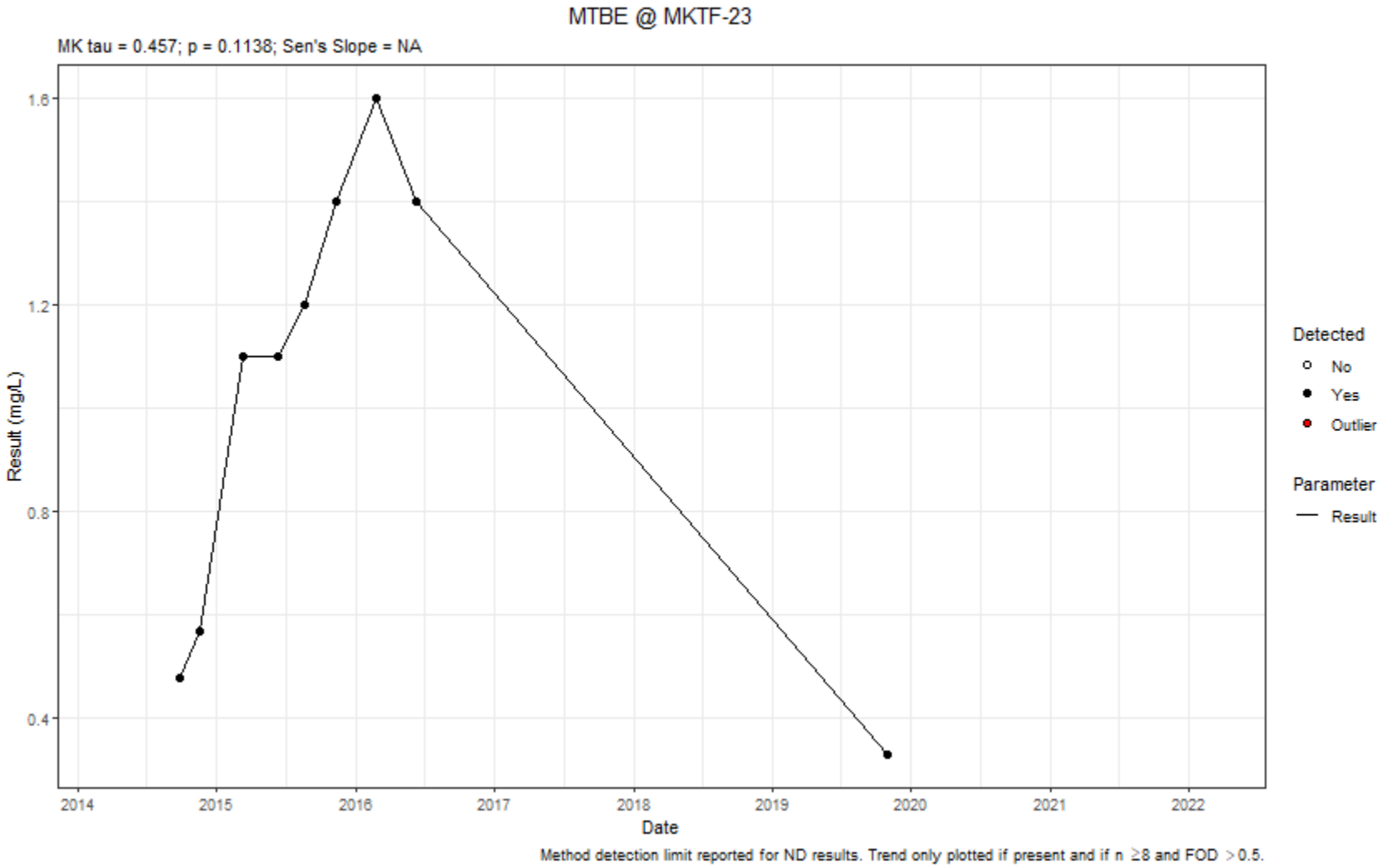
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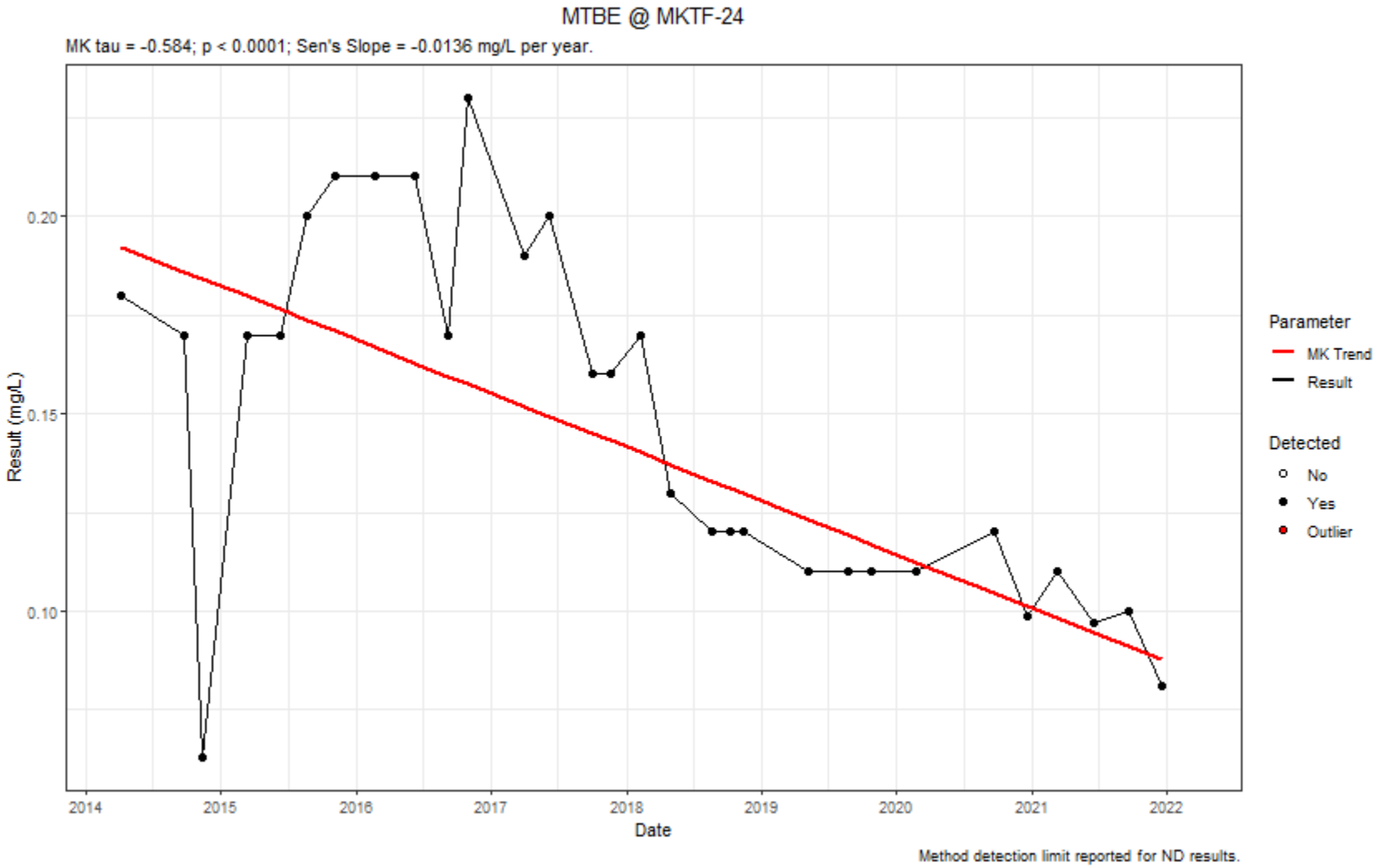
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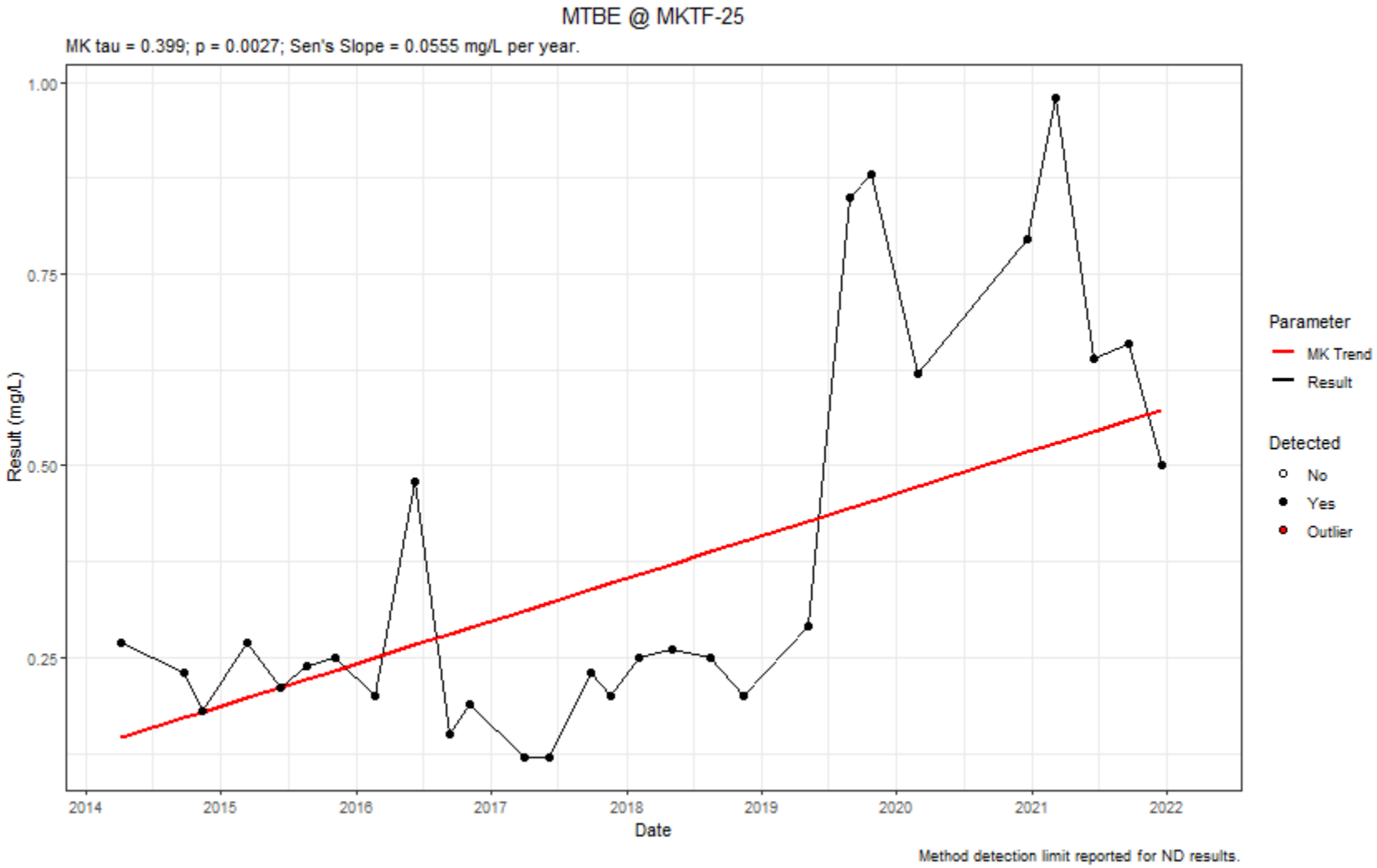
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District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 93234

CONDITIONS

Operator: Western Refining Southwest LLC 539 South Main Street Findlay, OH 45840	OGRID: 267595
	Action Number: 93234
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
scwells	Accepted for Record Retention Purposes-Only	11/23/2022