

**Western Refining Southwest LLC**

A subsidiary of Marathon Petroleum Corporation

September 14, 2022

Mr. Bradford Billings
EMNRD – Oil Conservation Division
1220 St. Francis Drive
Santa Fe, NM 87505

**RE: Western Refining Southwest LLC
Marathon Wingate Facility
Annual Groundwater Report**

Dear Mr. Billings:

Attached please find the 2022 Annual Groundwater Monitoring Report for the Western Refining Southwest LLC, Marathon Wingate Facility. If you have any questions or comments regarding the information contained herein, please do not hesitate to contact Mr. 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, Gallup Refinery

Ruth Cade
Vice-President

Enclosure

pdfc: D. Cobrain, NMED HWB
L. Barr, NMOCD
K. Luka, Marathon Petroleum Company
H. Jones, Trihydro Corporation

L. Andres, NMED HWB
M. Bracey, Marathon Petroleum Company
J. Moore, Marathon Wingate Facility

ATTACHMENT



WESTERN REFINING SOUTHWEST LLC
MARATHON WINGATE FACILITY
ANNUAL GROUNDWATER REPORT
SEPTEMBER 2022



Wingate Annual Groundwater Report

Table of Contents

1.0	Introduction	4
2.0	Fluid Level Gauging	5
3.0	Groundwater Sampling	6
4.0	Analytical Results	7
5.0	Summary	9
6.0	References	10
	Figures.....	
	Tables.....	
	Appendix A. Field Logs	
	Appendix B. Laboratory Reports	
	Appendix C. Tier II Data Validation Report	

List of Figures

- 1-1. Facility Location Map, Wingate 2022 Groundwater Report, Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico
- 2-1. Facility Map, Wingate 2022 Groundwater Report, Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico
- 2-2. Potentiometric Surface Map, Wingate 2022 Groundwater Report, Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico
- 2-3. Groundwater Elevation vs. Time, Wingate 2022 Groundwater Report, Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico
- 4-1. Groundwater Analytical Summary, Wingate 2022 Groundwater Report, Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico
- 4-2. Sulfate Concentration vs. Time, Wingate 2022 Groundwater Report, Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico
- 4-3. Total Dissolved Solids Concentration vs. Time, Wingate 2022 Groundwater Report, Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico
- 4-4. Benzene Concentrations of WMW-2 and WMW-9 vs. Time, Wingate 2022 Groundwater Report, Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico
- 4-5. Total Xylenes Concentration of WMW-2 vs. Time, Wingate 2022 Groundwater Report, Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico



Wingate Annual Groundwater Report

List of Tables

- 2-1. Fluid Level Monitoring (2022), Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico
- 4-1. Groundwater Volatile Organic Compounds Analytical Data (2022), Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico
- 4-2. Groundwater Semi-volatile Organic Compounds Analytical Data (2022), Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico
- 4-3. Groundwater Metals Analytical Data (2022), Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico
- 4-4. Groundwater General Chemistry Analytical Data (2022), Western Refining Southwest LLC, Marathon Wingate Facility, Gallup, New Mexico

List of Appendices

- A. Field Logs
- B. Laboratory Reports
- C. Tier II Data Validation Report

List of Acronyms

AP-121	Abatement Plan No. 121
mg/L	milligrams per liter
NM	New Mexico
OCD	Oil Conservation Division
SPH	separate phase hydrocarbon
SVOC	semi-volatile organic compound
VOC	volatile organic compound
WQCC	Water Quality Control Commission



Wingate Annual Groundwater Report

1.0 Introduction

This “Annual Groundwater Report” (Report) summarizes the groundwater monitoring activities conducted at the Western Refining Southwest LLC, Marathon Wingate Facility (Facility) in Gallup, New Mexico (NM). The Report is submitted in accordance with the technical specifications of Abatement Plan No. 121 (AP-121), dated October 1, 2015, as approved by the NM Oil Conservation Division (OCD)(NM OCD 2015). This Report describes water quality monitoring activities completed during 2022. Groundwater sampling is performed on an annual basis. The data are used to monitor the groundwater quality at the Facility.

The Facility is located in McKinley County, NM, approximately one mile east of the city of Gallup, NM, at 68 El Paso Circle, Gallup, NM 87301 (Figure 1-1). The Facility is a former gas fractionator facility that operated until October 2018. Historically, the Facility fractionated a mixed liquefied petroleum-gas stream into usable products. Its feedstock was received via pipelines from four natural gas facilities. The Facility historically produced propane, butane, isobutane, natural gas liquid (light gasoline), and mixed butane.

This Report summarizes the groundwater monitoring activities conducted at the Facility on July 12 and 13, 2022. The following information is provided:

- Summary of monitoring activities that occurred during 2022
- Summary table of analytical results
- Fluid level and potentiometric surface maps



Wingate Annual Groundwater Report

2.0 Fluid Level Gauging

Trihydro Corporation (Trihydro) collected fluid level measurements from nine monitoring wells at the Facility on July 12 and 13, 2022. There are six wells located on site and three wells off site (Figure 2-1). Field logs for the 2022 monitoring event are included in Appendix A.

An oil-water surface interface probe was used to measure groundwater and separate phase hydrocarbon (SPH) depths, if detected. SPH was not detected in the Facility's monitoring wells during the 2022 sampling event. The interface probe was decontaminated after use at each monitoring well location.

The 2022 groundwater elevations were calculated from the depth to groundwater and ground surface elevation measurements and are presented in Table 2-1. The measuring point elevation of WMW-9 was surveyed in February 2022. This resulted in a correction of the 2021 water surface elevations from the 2021 annual report.

Groundwater depths were consistent with previous measurements. The groundwater elevations were used to develop the potentiometric surface map (Figure 2-2). Groundwater elevation versus time is presented on Figure 2-3. Groundwater generally flows towards the northeast and is consistent with previous monitoring events.

During the July 2020 fluid level gauging event, the groundwater elevation in monitoring well WMW-6 was measured approximately 10 feet higher than historically observed groundwater elevations, most likely due to heavy monsoon rains. However, during the 2021 fluid level gauging event, the groundwater elevation in WMW-6 had returned to its historical level. The groundwater elevation in 2022 was consistent with historical levels as well (Figure 2-3).

Because of a 10-foot discrepancy between the 2019 and 2020 gauging events, WMW-3 was proposed to be plugged and abandoned in 2020. Due to delays caused by the COVID-19 pandemic, this abandonment has not occurred. A well permit could not be secured in time to plug and abandon the well in 2022. The current proposal is to replace WMW-3 before the 2023 annual sampling event, contingent upon negotiation of access with the Navajo Nation.



Wingate Annual Groundwater Report

3.0 Groundwater Sampling

Groundwater samples were collected on July 12 and 13, 2022, from the nine monitoring wells. As required by AP-121, OCD was notified two weeks prior to the sampling.

Samples were collected using a low-flow peristaltic pump with disposable tubing that was replaced between monitoring wells. Field parameters were collected at least every three minutes while groundwater from each well was extracted. The groundwater was extracted until the field parameters stabilized within 10 percent variability. Field parameters included temperature, pH, conductivity, total dissolved solids, salinity, oxidation-reduction potential, and dissolved oxygen. Following stabilization, the groundwater was collected in laboratory-prepared sample containers. Samples collected were analyzed for the following constituents:

- Volatile Organic Compounds (VOC) – Method 8260
- Semi-Volatile Organic Compounds (SVOC) – Method 8270
- Dissolved Metals – Method 6010
- Mercury – Method 7470
- Alkalinity, Total as Calcium Carbonate – Method SM2320B
- Total Dissolved Solids – Method SM2540C
- pH – Method 9040
- Chloride, Nitrogen, Nitrate, and Sulfate – Method 300.0
- Total Uranium – Method 200.8

Quality assurance/quality control samples (i.e., field duplicates, equipment blanks, and trip blanks) were collected and submitted under chain-of-custody controls for laboratory analysis. A duplicate groundwater sample, field blank, and equipment blank were collected at monitoring well WMW-5. The duplicate sample and equipment blank were analyzed for the same constituents as the monitoring wells. The field blank was analyzed for VOCs. One trip blank was provided by the laboratory for each cooler and trip blanks were kept in the coolers during the entirety of sampling. The trip blanks were analyzed for VOCs.



Wingate Annual Groundwater Report

4.0 Analytical Results

The groundwater samples were analyzed by Hall Environmental Laboratory of Albuquerque, NM. Analytical laboratory reports are provided in Appendix B.

The 2022 groundwater analytical results for VOCs, SVOCs, metals, and general chemistry analytes are provided in Tables 4-1, 4-2, 4-3, and 4-4, respectively. The commonly noted constituents of concern that have historically exceeded regulatory standards are shown on Figure 4-1. Sulfate concentrations versus time for the monitoring wells are shown on Figure 4-2. Total dissolved solids concentrations versus time for the monitoring wells are shown on Figure 4-3. Benzene concentrations versus time for monitoring wells WMW-2 and WMW-9 are shown on Figure 4-4, and total xylenes concentrations versus time in monitoring well WMW-2 is shown on Figure 4-5.

Analytical results were compared to the New Mexico Water Quality Control Commission (WQCC) groundwater quality standards, as presented in New Mexico Administrative Code 20.6.2.3103. Analytical results that exceeded their respective standards are shown in bold text in Tables 4-1 through Table 4-4.

The concentration of benzene in monitoring well WMW-2 (23 milligrams per liter [mg/L]) continues to exceed the groundwater quality standard (0.005 mg/L). The groundwater sample from monitoring well WMW-9 also exceeded the groundwater standard of benzene (5.2 mg/L) but was lower than the sample from 2021 (21 mg/L). Multiple investigations have taken place to delineate dissolved phase benzene near WMW-2, including the installation of WMW-9. WMW-9 will continue to be included in the annual groundwater monitoring program moving forward.

No other VOC detections exceeded the WQCC groundwater quality standards. There were no SVOC detections exceeding the WQCC groundwater quality standards during 2022. Three metals exceeded their respective standards during 2022: dissolved arsenic exceeded in WMW-1R, WMW-2, and WMW-9; dissolved selenium in WMW-2 and WMW-9; and total uranium exceeded in WMW-3. Chloride, total dissolved solids, and sulfate have historically exceeded the WQCC groundwater quality standards across the Facility, and exceedances for these analytes were identified in 2022, as well. These exceedances are generally consistent with historical monitoring. It should also be noted that in the wells where arsenic resulted in a non-detection, the detection limit (0.02 mg/L) exceeded the applicable standard



Wingate Annual Groundwater Report

(0.01 mg/L). All data provided by analyses where the limit of detection values exceed standard values are considered data quality exceptions and will not be used to demonstrate compliance.

The analytical data underwent Tier I and Tier II data validation. Data qualifiers are included in Tables 4-1 through 4-4, if applicable. The Tier II data validation reports are provided in Appendix C. Several data were rejected during the QC process (labeled “R” in the data validation reports):

- Carbonate in WMW-9 was rejected because the sample was analyzed outside of the holding time.
- SVOC non-detects in the duplicate sample (WMW-5 DUP) were rejected because the surrogate recoveries were less than 10%, indicating low bias. Phenol is the only compound in the target SVOC list that was rejected. The other compounds are included in the “all other SVOCs” category.

A total of 15 data points were rejected. The data completeness measure was calculated at 99.04% and is acceptable.



Wingate Annual Groundwater Report

5.0 Summary

Groundwater monitoring activities at the Facility occurred on July 12 and 13, 2022. Activities included fluid level gauging and groundwater sampling. Analytical results were compared against WQCC groundwater quality standards and exceedances were noted in Section 4.0.

Groundwater exceedances across the site are consistent with historical results. Benzene continues to exceed WQCC groundwater quality standards in the southwest portion of the site, including monitoring well WMW-9.

Trihydro has completed several investigations to delineate the dissolved phase benzene at the Facility. A fifth phase of the investigation was conducted the week of June 28, 2022. Following the delineation of benzene, a report summarizing the investigation activities will be submitted to OCD. This report will include potential remediation options to remove benzene from the groundwater.

Two new groundwater monitoring wells (WMW-10 and WMW-11) are scheduled to be installed before the next annual sampling event occurs in July 2023. Additionally, WMW-3 is scheduled to be plugged, abandoned, and replaced before the July 2023 sampling event, after property ownership is verified and access is obtained, if necessary. The Facility will notify OCD for approval prior to installation of the new wells and the replacement well WMW-3.



Wingate Annual Groundwater Report

6.0 References

New Mexico Oil Conservation Division (NM OCD). 2015. Abatement Plan No. 121.

EPA. 2022. National Primary Drinking Water Regulations. Available at: <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>.

New Mexico Environment Department (NMED). 2017. Final RCRA Post-Closure Permit, Western Refining Southwest, Inc., Gallup Refinery, EPA ID NM No. NM000333211. September.

Figures

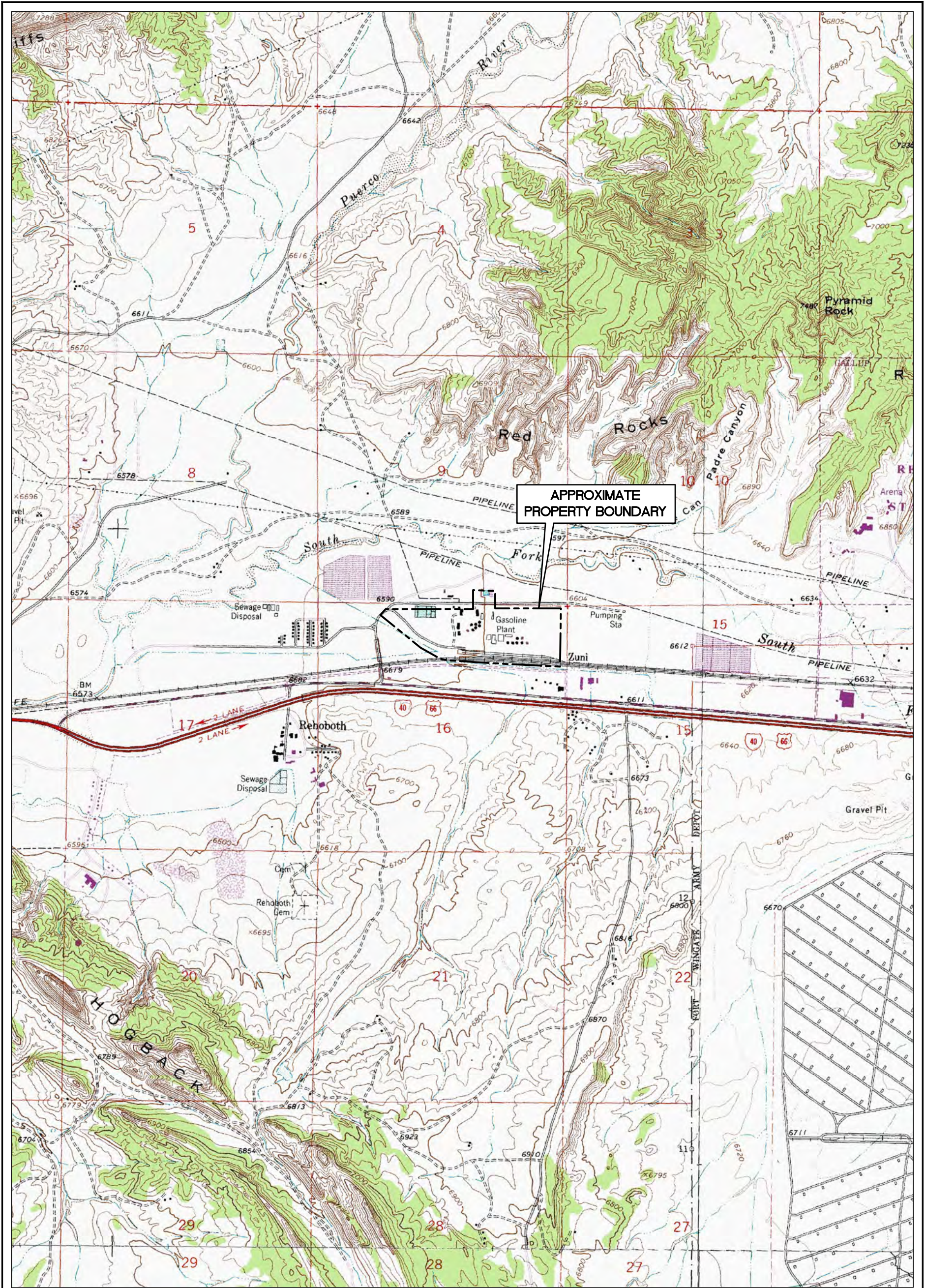
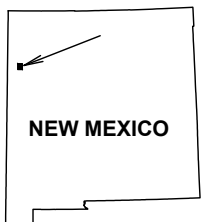


Image Cite: U.S. Geological Survey, 1:24,000-Scale Quadrangles, Gallup East and Church Rock: 1979



QUADRANGLE LOCATION



0 2,000'

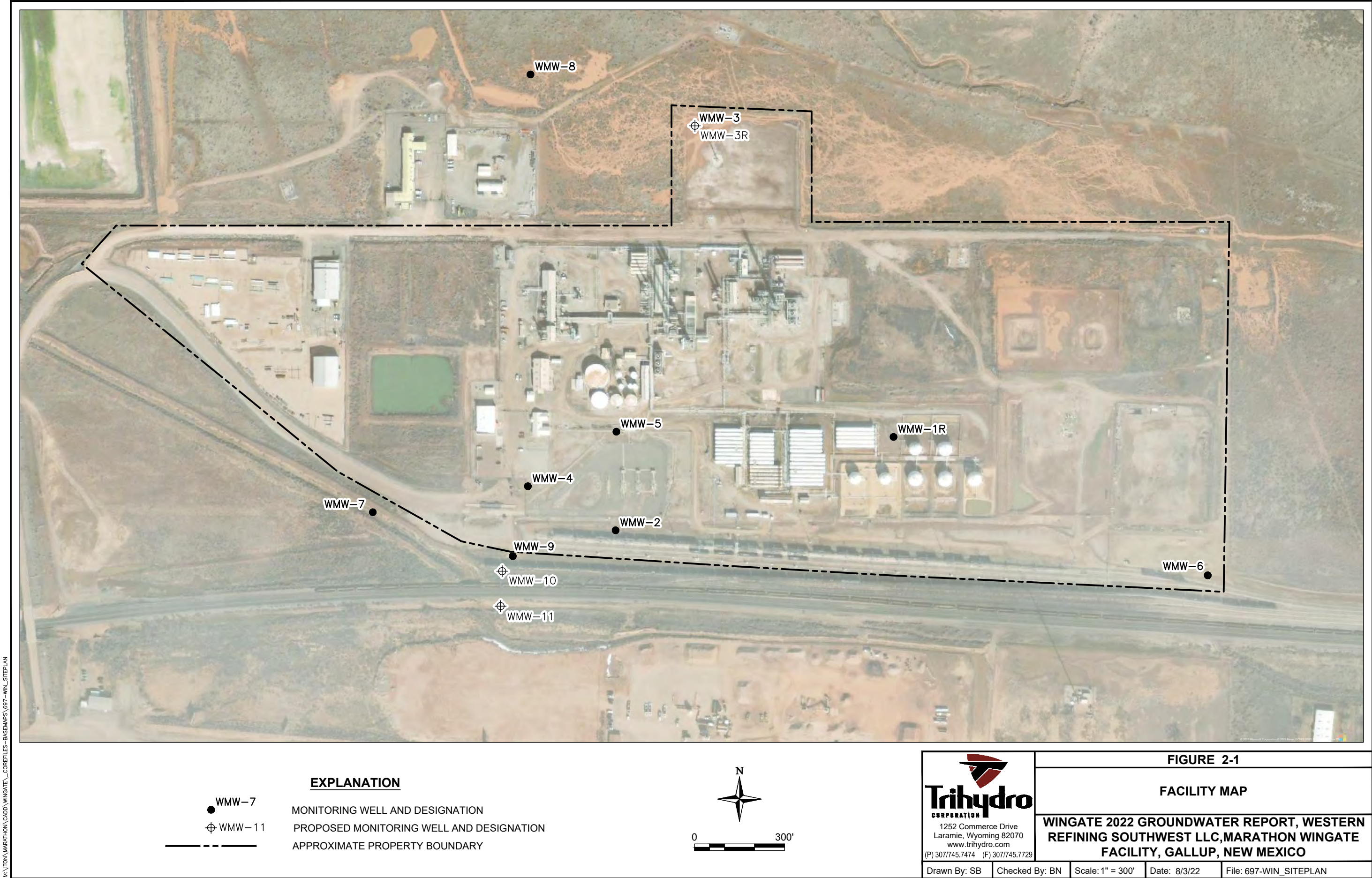
Trihydro
CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 1-1

FACILITY LOCATION MAP

WINGATE 2022 GROUNDWATER REPORT, WESTERN
REFINING SOUTHWEST LLC, MARATHON WINGATE
FACILITY, GALLUP, NEW MEXICO

Drawn By: SB Checked By: BN Scale: 1" = 2,000' Date: 8/3/2022 File: 697-WIN_SITELOCATIONMAP



M:\TON\MARATHON\CADD\WINGATE\GROUNDWATER\REPORTING\REPORT2022\697-WIN_PSMAP-2022

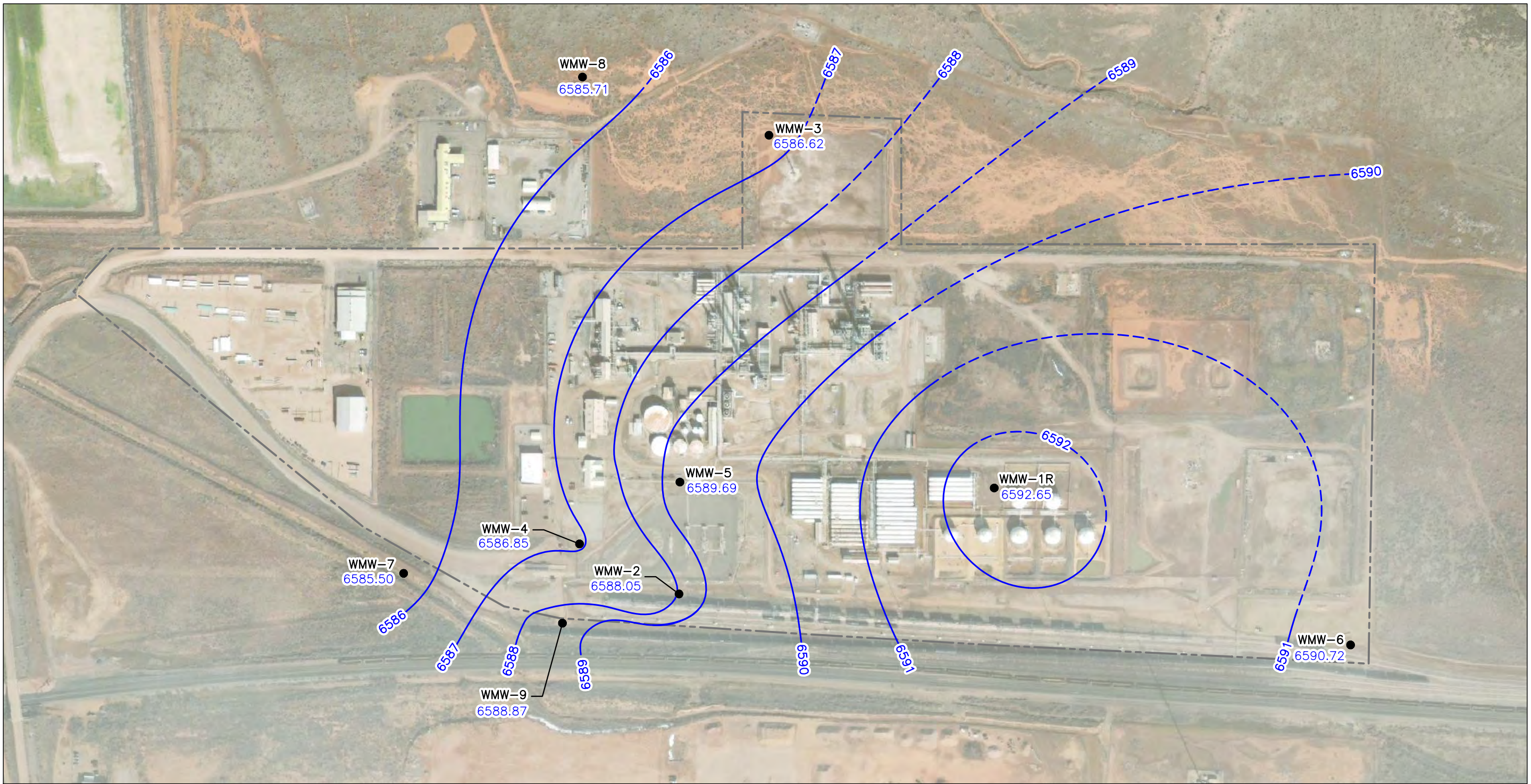
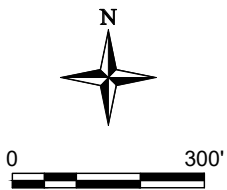


Image Cite: DigitalGlobe © CNES (2022) Distribution Airbus DS © Microsoft Corporation, BING Imagery

EXPLANATION

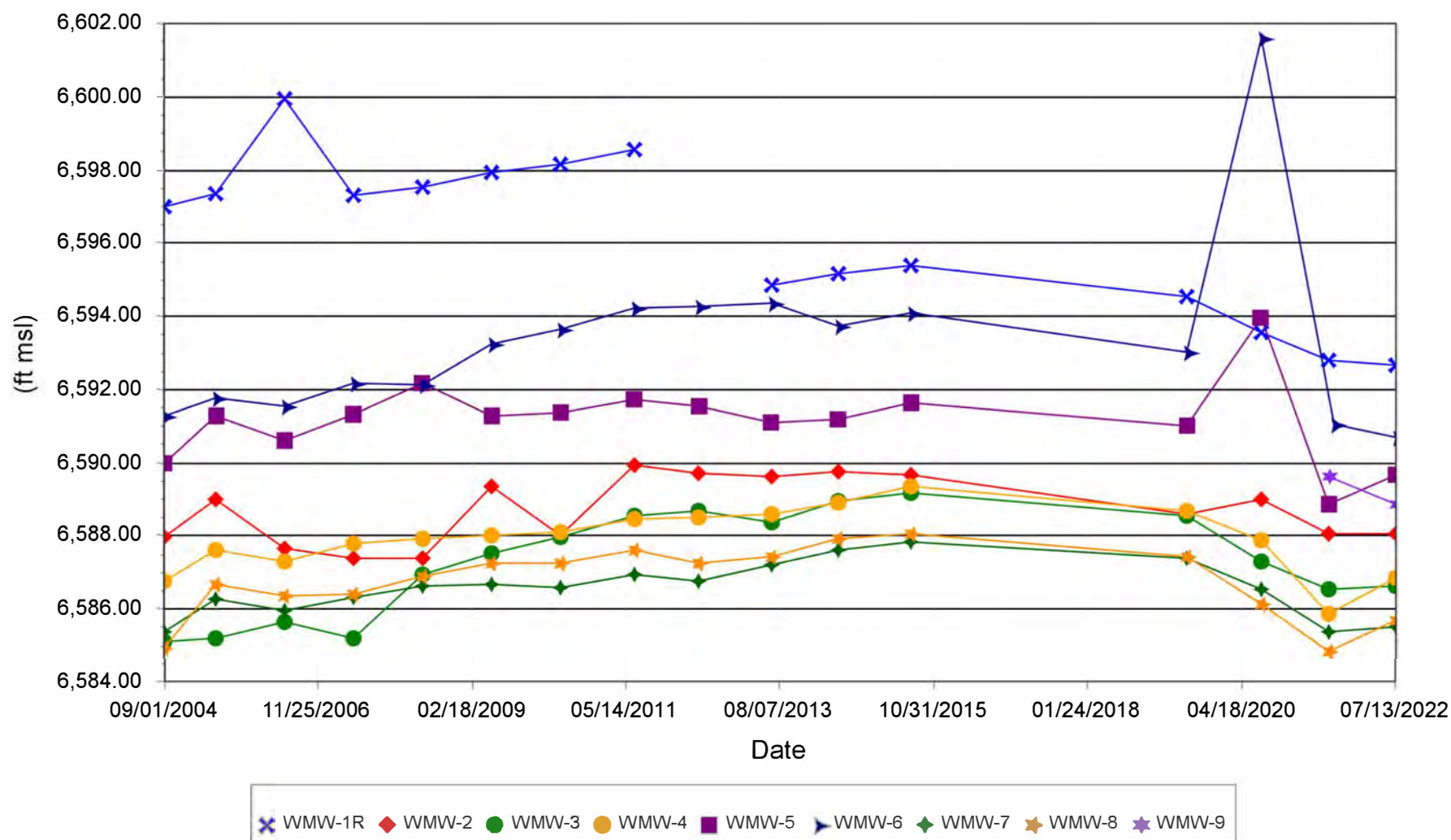
- WMW-9
6588.87
 - 6592 —
 - — —
 - FT AMSL
- MONITORING WELL AND DESIGNATION
SHOWING GROUNDWATER ELEVATION
IN FT AMSL
- LINE OF EQUAL ELEVATION OF POTENTIOMETRIC
SURFACE (FT AMSL, CONTOUR INTERVAL 1 FT., DASHED
WHERE INFERRED)
- APPROXIMATE PROPERTY BOUNDARY
- FEET ABOVE MEAN SEA LEVEL



Trihydro
CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 2-2				
POTENTIOMETRIC SURFACE MAP (JULY 2022)				
WINGATE 2022 GROUNDWATER REPORT, WESTERN REFINING SOUTHWEST LLC, MARATHON WINGATE FACILITY, GALLUP, NEW MEXICO				
Drawn By: SB	Checked By: BN	Scale: 1" = 300'	Date: 9/1/22	File: 697-WIN_PSMAP-2022

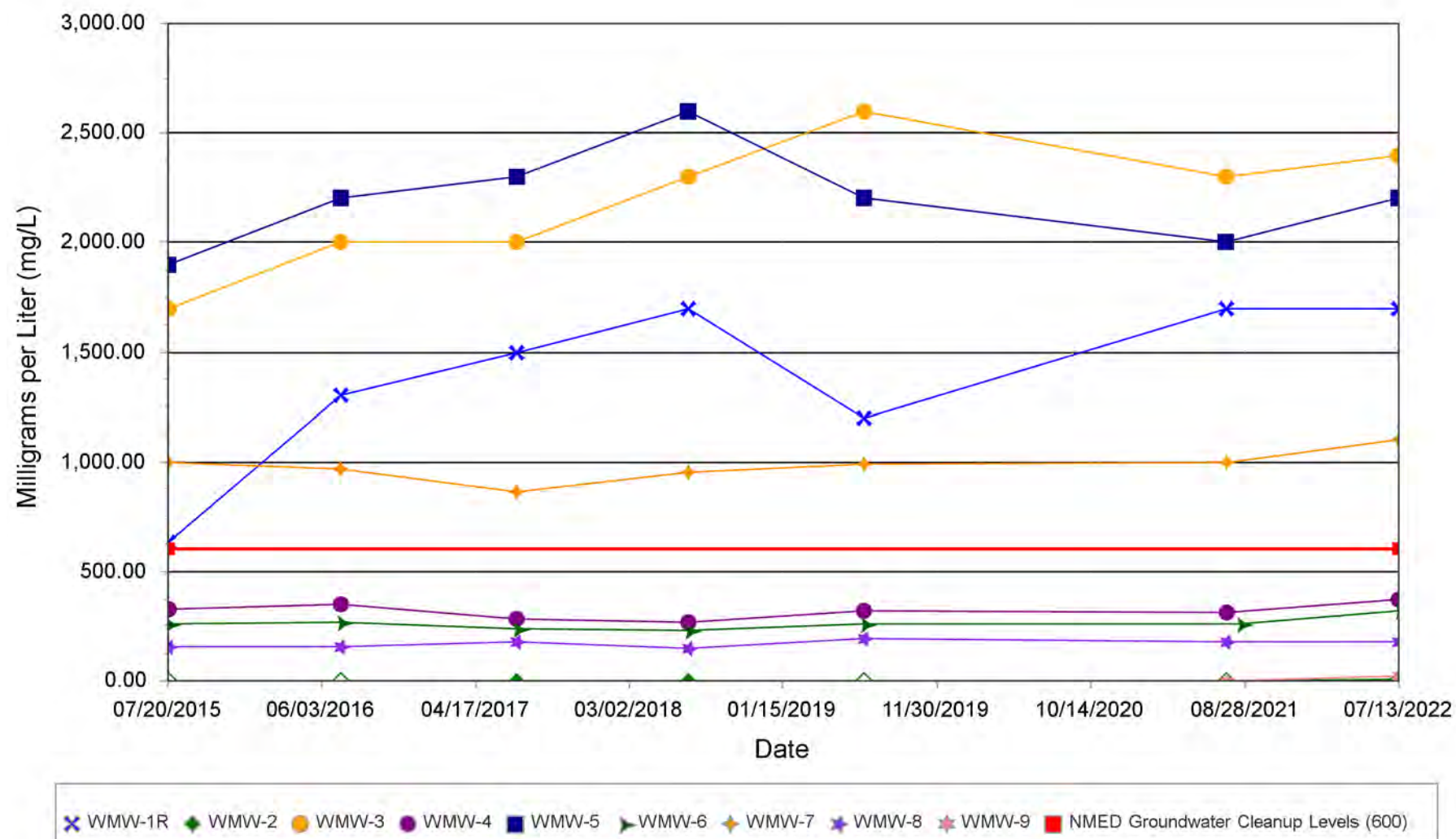
FIGURE 2-3. GROUNDWATER ELEVATION VS. TIME
WINGATE 2022 GROUNDWATER REPORT
WESTERN REFINING SOUTHWEST LLC, MARATHON WINGATE FACILITY, GALLUP, NEW MEXICO



Notes: ft msl - Feet above mean sea level



FIGURE 4-2. SULFATE CONCENTRATION VS. TIME
WINGATE 2022 GROUNDWATER REPORT
WESTERN REFINING SOUTHWEST LLC, MARATHON WINGATE FACILITY, GALLUP, NEW MEXICO



Notes: NMED Groundwater Cleanup Levels - New Mexico Environment Department Groundwater Cleanup Levels, New Mexico Administrative Code 20.6.2.3103

FIGURE 4-3. TOTAL DISSOLVED SOLIDS CONCENTRATION VS. TIME
WINGATE 2022 GROUNDWATER REPORT
WESTERN REFINING SOUTHWEST LLC, MARATHON WINGATE FACILITY, GALLUP, NEW MEXICO

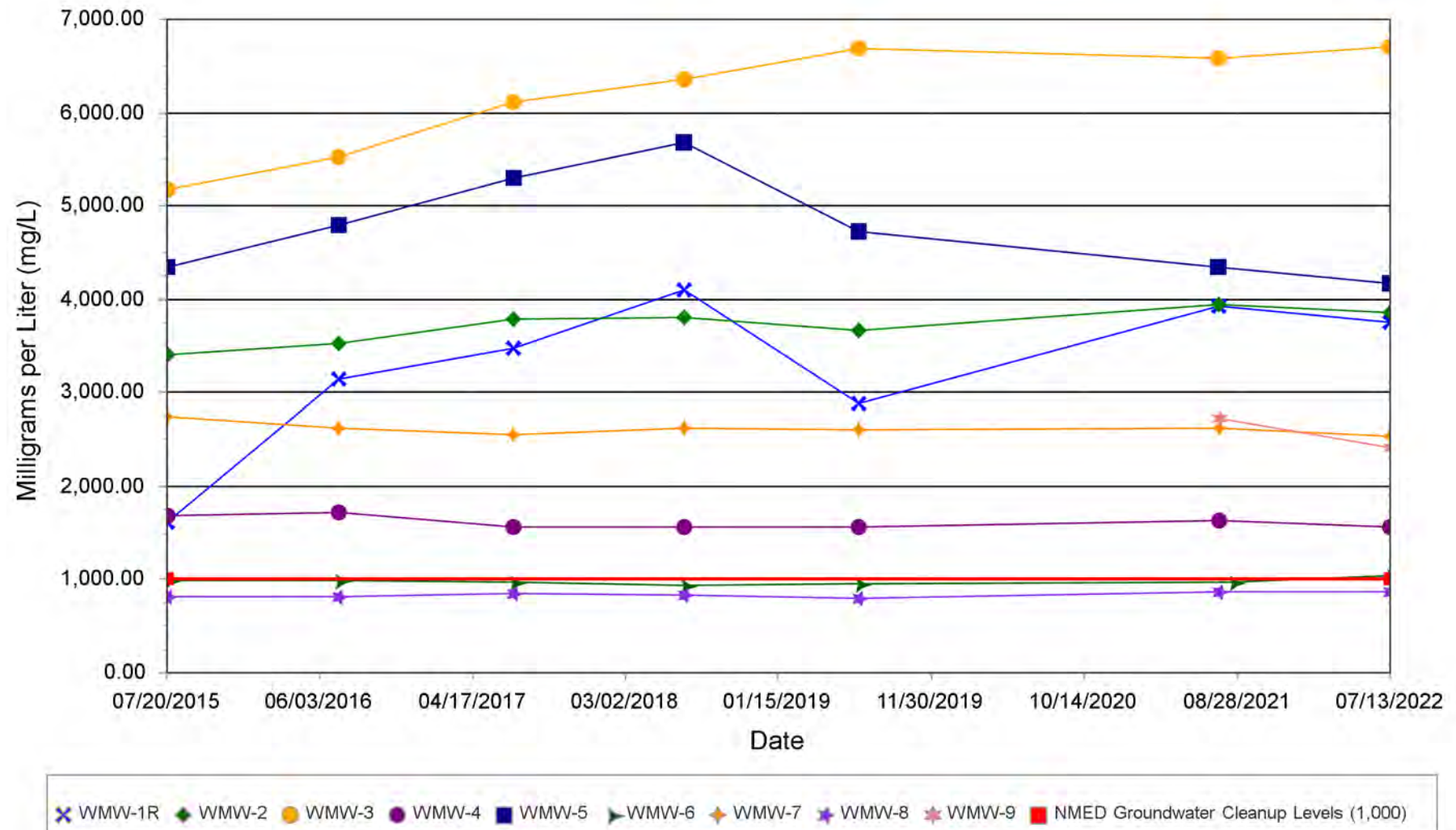
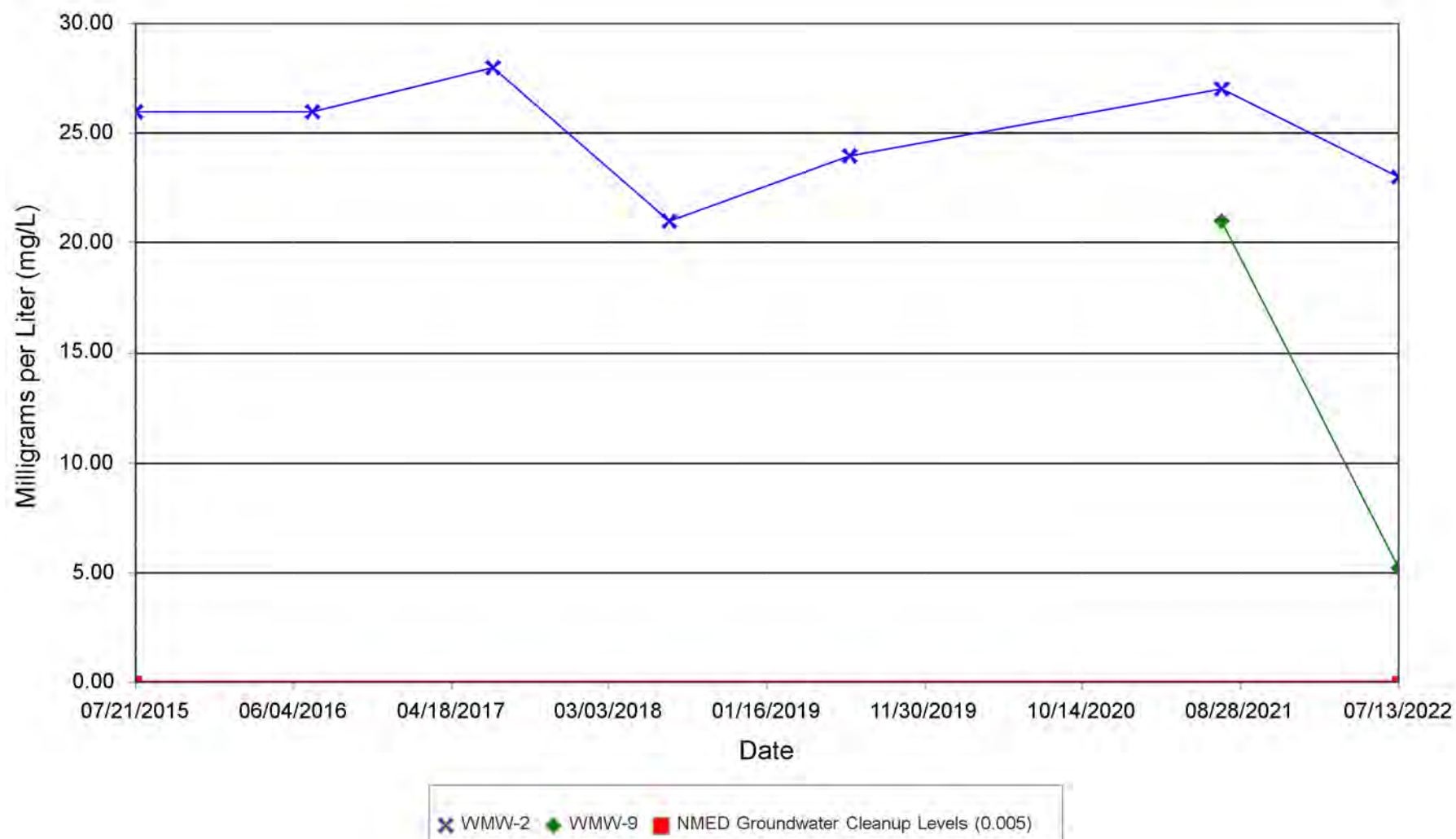
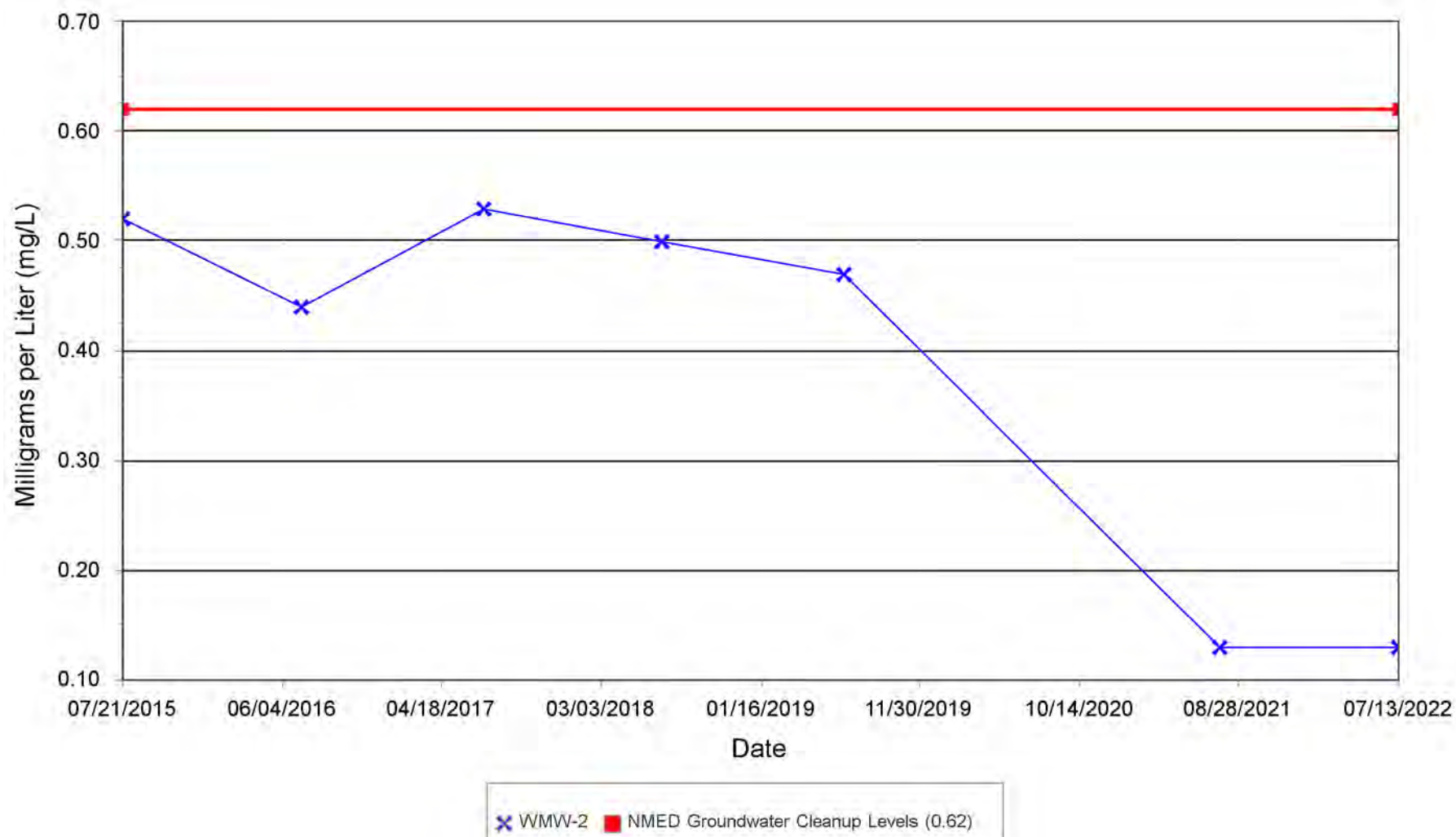


FIGURE 4-4. BENZENE CONCENTRATIONS OF WMW-2 AND WMW-9 VS. TIME
WINGATE 2022 GROUNDWATER REPORT
WESTERN REFINING SOUTHWEST LLC, MARATHON WINGATE FACILITY, GALLUP, NEW MEXICO



Notes: NMED Groundwater Cleanup Levels - New Mexico Environment Department Groundwater Cleanup Levels, New Mexico Administrative Code 20.6.2.3103

FIGURE 4-5. TOTAL XYLENES CONCENTRATION OF WMW-2 VS. TIME
WINGATE 2022 GROUNDWATER REPORT
WESTERN REFINING SOUTHWEST LLC, MARATHON WINGATE FACILITY, GALLUP, NEW MEXICO



Notes: NMED Groundwater Cleanup Levels - New Mexico Environment Department Groundwater Cleanup Levels, New Mexico Administrative Code 20.6.2.3103

Tables

TABLE 2-1. FLUID LEVEL MONITORING (2022)
WESTERN REFINING SOUTHWEST LLC, MARATHON WINGATE FACILITY, GALLUP, NEW MEXICO

Location	Date Measured	Depth to Product (ft-bmp)	Depth to Water (ft-bmp)	Water Elevation (ft-amsl)
WMW-1R	7/13/2022	ND	11.12	6592.65
WMW-2	7/13/2022	ND	6.83	6588.05
WMW-3	7/12/2022	ND	8.30	6586.62
WMW-4	7/13/2022	ND	8.64	6586.85
WMW-5	7/13/2022	ND	7.42	6589.69
WMW-6	7/13/2022	ND	13.14	6590.72
WMW-7	7/13/2022	ND	9.20	6585.50
WMW-8	7/12/2022	ND	8.34	6585.71
WMW-9	7/13/2022	ND	7.71	6588.87

Notes:

ft-bmp = feet below measuring point

ft-amsl = feet above mean sea level

ND = Not detected

TABLE 4-1. GROUNDWATER VOLATILE ORGANIC COMPOUNDS ANALYTICAL DATA (2022)
WESTERN REFINING SOUTHWEST LLC, MARATHON WINGATE FACILITY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Benzene (mg/L)	Ethylbenzene (mg/L)	Toluene (mg/L)	Xylenes, Total (mg/L)	Naphthalene (mg/L)	Acetone (mg/L)	2-Butanone (mg/L)	Chloromethane (mg/L)	1,2-Dichloro-ethane (mg/L)
WMW-1R	07/13/22	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.0015)	ND(0.002)	ND(0.01)	ND(0.01)	ND(0.003)	ND(0.001)
WMW-2	07/13/22	23	0.096	ND(0.05)	0.13	0.026 J	ND(0.5)	ND(0.5)	ND(0.15)	ND(0.05)
WMW-3	07/12/22	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.0015)	ND(0.002)	ND(0.01)	ND(0.01)	ND(0.003)	ND(0.001)
WMW-4	07/13/22	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.0015)	ND(0.002)	ND(0.01)	ND(0.01)	ND(0.003)	ND(0.001)
WMW-5	07/13/22	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.0015)	ND(0.002)	ND(0.01)	ND(0.01)	ND(0.003)	ND(0.001)
WMW-5 Dup	07/13/22	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.0015)	ND(0.002)	ND(0.01)	ND(0.01)	ND(0.003)	ND(0.001)
WMW-6	07/13/22	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.0015)	ND(0.002)	ND(0.01)	ND(0.01)	ND(0.003)	ND(0.001)
WMW-7	07/13/22	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.0015)	ND(0.002)	ND(0.01)	ND(0.01)	ND(0.003)	ND(0.001)
WMW-8	07/12/22	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.0015)	ND(0.002)	ND(0.01)	ND(0.01)	ND(0.003)	ND(0.001)
WMW-9	07/13/22	5.2	0.035 J	ND(0.05)	0.051 J	ND(0.1)	ND(0.5)	ND(0.5)	ND(0.15)	ND(0.05)

NMED GW Cleanup Level	0.005	0.7	1	0.62	0.03	NA	NA	NA	0.005
-----------------------	-------	-----	---	------	------	----	----	----	-------

Notes:
Dup - duplicate sample
J - Estimated concentration
NA - not applicable
ND - not detected
mg/L - milligrams per liter
VOC - volatile organic compounds
Bolded results exceed the NMED GW Cleanup Level
NMED GW Cleanup Level - New Mexico Environment Department Groundwater Cleanup Levels, New Mexico Administrative Code 20.6.2.3103

TABLE 4-1. GROUNDWATER VOLATILE ORGANIC COMPOUNDS ANALYTICAL DATA (2022)
WESTERN REFINING SOUTHWEST LLC, MARATHON WINGATE FACILITY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Isopropyl-benzene (mg/L)	4-Methyl-2-Pentanone (mg/L)	1-Methyl-naphthalene (mg/L)	2-Methyl-naphthalene (mg/L)	n-Propyl-benzene (mg/L)	1,2,4-Trimethyl- benzene (mg/L)	1,3,5-Trimethyl- benzene (mg/L)	All Other VOCs
WMW-1R	07/13/22	ND(0.001)	ND(0.01)	ND(0.004)	ND(0.004)	ND(0.001)	ND(0.001)	ND(0.001)	ND
WMW-2	07/13/22	ND(0.05)	ND(0.5)	ND(0.2)	ND(0.2)	ND(0.05)	0.031 J	ND(0.05)	ND
WMW-3	07/12/22	ND(0.001)	ND(0.01)	ND(0.004)	ND(0.004)	ND(0.001)	ND(0.001)	ND(0.001)	ND
WMW-4	07/13/22	ND(0.001)	ND(0.01)	ND(0.004)	ND(0.004)	ND(0.001)	ND(0.001)	ND(0.001)	ND
WMW-5	07/13/22	ND(0.001)	ND(0.01)	ND(0.004)	ND(0.004)	ND(0.001)	ND(0.001)	ND(0.001)	ND
WMW-5 Dup	07/13/22	ND(0.001)	ND(0.01)	ND(0.004)	ND(0.004)	ND(0.001)	ND(0.001)	ND(0.001)	ND
WMW-6	07/13/22	ND(0.001)	ND(0.01)	ND(0.004)	ND(0.004)	ND(0.001)	ND(0.001)	ND(0.001)	ND
WMW-7	07/13/22	ND(0.001)	ND(0.01)	ND(0.004)	ND(0.004)	ND(0.001)	ND(0.001)	ND(0.001)	ND
WMW-8	07/12/22	ND(0.001)	ND(0.01)	ND(0.004)	ND(0.004)	ND(0.001)	ND(0.001)	ND(0.001)	ND
WMW-9	07/13/22	ND(0.05)	ND(0.5)	ND(0.2)	ND(0.2)	ND(0.05)	ND(0.05)	ND(0.05)	ND

NMED GW Cleanup Level	NA	NA	NA	NA	NA	NA	NA	NA	NA
Notes: Dup - duplicate sample J - Estimated concentration NA - not applicable ND - not detected mg/L - milligrams per liter VOC - volatile organic compounds Bolded results exceed the NMED GW Cleanup Level NMED GW Cleanup Level - New Mexico Environment Department Groundwater Cleanup Levels, New Mexico Administrative Code 20.6.2.3103									
ProjectDirect: Analytical Table 4-1. VOCs PK:8111 RK:101704									2 of 2

TABLE 4-2. GROUNDWATER SEMI-VOLATILE ORGANIC COMPOUNDS ANALYTICAL DATA (2022)
WESTERN REFINING SOUTHWEST LLC, MARATHON WINGATE FACILITY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Acenaphthene (mg/L)	Benzyl Alcohol (mg/L)	Bis(2-ethyl hexyl)- phthalate (mg/L)	Carbazole (mg/L)	Dibenzo-furan (mg/L)	Di-n-octyl-phthalate (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Phenanthrene (mg/L)
WMW-1R	07/13/22	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.02)	ND(0.01)	ND(0.01)	ND(0.01)
WMW-2	07/13/22	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.02)	ND(0.01)	ND(0.01)	ND(0.01)
WMW-3	07/12/22	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.02)	ND(0.01)	ND(0.01)	ND(0.01)
WMW-4	07/13/22	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.02)	ND(0.01)	ND(0.01)	ND(0.01)
WMW-5	07/13/22	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.02)	ND(0.01)	ND(0.01)	ND(0.01)
WMW-5 Dup	07/13/22	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.02)	ND(0.01)	ND(0.01)	ND(0.01)
WMW-6	07/13/22	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.02)	ND(0.01)	ND(0.01)	ND(0.01)
WMW-7	07/13/22	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.02)	ND(0.01)	ND(0.01)	ND(0.01)
WMW-8	07/12/22	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.02)	ND(0.01)	ND(0.01)	ND(0.01)
WMW-9	07/13/22	ND(0.01)	ND(0.005)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.02)	ND(0.01)	ND(0.01)	ND(0.01)

NMED GW Cleanup Level	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Notes: Dup - duplicate sample J - Estimated concentration NA - not applicable ND - not detected mg/L - milligrams per liter R - Rejected, Data not usable SVOC - semi-volatile organic compounds Bolded results exceed the NMED GW Cleanup Level NMED GW Cleanup Level - New Mexico Environment Department Groundwater Cleanup Levels, New Mexico Administrative Code 20.6.2.3103										
ProjectDirect: Analytical Table 4-2. SVOCs PK:8111 RK:101705										1 of 2

TABLE 4-2. GROUNDWATER SEMI-VOLATILE ORGANIC COMPOUNDS ANALYTICAL DATA (2022)
WESTERN REFINING SOUTHWEST LLC, MARATHON WINGATE FACILITY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Phenol (mg/L)	Naphthalene (mg/L)	1-Methyl-naphthalene (mg/L)	2-Methyl-naphthalene (mg/L)	All Other SVOCs
WMW-1R	07/13/22	ND(0.02)	ND(0.005)	ND(0.005)	ND(0.005)	ND
WMW-2	07/13/22	ND(0.02)	0.011	0.0046 J	0.0058	ND
WMW-3	07/12/22	ND(0.02)	ND(0.005)	ND(0.005)	ND(0.005)	ND
WMW-4	07/13/22	ND(0.02)	ND(0.005)	ND(0.005)	ND(0.005)	ND
WMW-5	07/13/22	ND(0.02)	ND(0.005)	ND(0.005)	ND(0.005)	ND
WMW-5 Dup	07/13/22	ND(0.02) R	ND(0.005)	ND(0.005)	ND(0.005)	ND
WMW-6	07/13/22	ND(0.02)	ND(0.005)	ND(0.005)	ND(0.005)	ND
WMW-7	07/13/22	ND(0.02)	ND(0.005)	ND(0.005)	ND(0.005)	ND
WMW-8	07/12/22	ND(0.02)	ND(0.005)	ND(0.005)	ND(0.005)	ND
WMW-9	07/13/22	0.19	ND(0.005)	ND(0.005)	ND(0.005)	ND

NMED GW Cleanup Level	NA	0.03	NA	NA	NA
-----------------------	----	------	----	----	----

Notes:
Dup - duplicate sample
J - Estimated concentration
NA - not applicable
ND - not detected
mg/L - milligrams per liter
R - Rejected, Data not usable
SVOC - semi-volatile organic compounds
Bolded results exceed the NMED GW Cleanup Level
NMED GW Cleanup Level - New Mexico Environment Department Groundwater Cleanup Levels, New Mexico Administrative Code 20.6.2.3103

TABLE 4-3. GROUNDWATER METALS ANALYTICAL DATA (2022)
WESTERN REFINING SOUTHWEST LLC, MARATHON WINGATE FACILITY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Arsenic, Dissolved (mg/L)	Barium, Dissolved (mg/L)	Cadmium, Dissolved (mg/L)	Calcium, Dissolved (mg/L)	Chromium, Dissolved (mg/L)	Lead, Dissolved (mg/L)	Mercury, Total (mg/L)	Selenium, Dissolved (mg/L)	Silver, Dissolved (mg/L)	Sodium, Dissolved (mg/L)	Uranium, Total (mg/L)
WMW-1R	07/13/22	0.023	0.07	ND(0.002)	340	ND(0.006)	ND(0.02)	ND(0.0002)	ND(0.05)	0.0065 JB	900	0.029
WMW-2	07/13/22	0.021	0.6	ND(0.002)	43	ND(0.006)	ND(0.02)	ND(0.0002)	0.074	0.001J/ND(0.005) U*	1500	ND(0.0005)
WMW-3	07/12/22	ND(0.02)	0.043	ND(0.002)	170	0.0063	ND(0.02)	ND(0.0002)	ND(0.05)	0.0019J/ND(0.005) U*	2100	0.054
WMW-4	07/13/22	ND(0.02)	0.054	ND(0.002)	19	ND(0.006)	ND(0.02)	ND(0.0002)	0.047 J	ND(0.005)	580	0.00096
WMW-5	07/13/22	ND(0.02)	0.0053 J	ND(0.002)	220	ND(0.006)	ND(0.02)	ND(0.0002)	0.047 J	0.0037J/ND(0.005) U*	1200	0.021
WMW-5 Dup	07/13/22	ND(0.02)	0.005 J	ND(0.002)	220	ND(0.006)	ND(0.02)	ND(0.0002)	0.039 J	0.0042J/ND(0.005) U*	1200	0.018
WMW-6	07/13/22	ND(0.02)	0.034	ND(0.002)	36	ND(0.006)	ND(0.02)	ND(0.0002)	0.041 J	0.0013J/ND(0.005) U*	340	0.009
WMW-7	07/13/22	ND(0.02)	0.021	ND(0.002)	25	ND(0.006)	ND(0.02)	ND(0.0002)	ND(0.05)	0.0011J/ND(0.005) U*	880	0.026
WMW-8	07/12/22	0.02 J	0.13	ND(0.002)	34	ND(0.006)	ND(0.02)	ND(0.0002)	0.038 J	ND(0.005)	280	0.013
WMW-9	07/13/22	0.027	0.87	ND(0.002)	20	ND(0.006)	ND(0.02)	ND(0.0002)	0.056	ND(0.005)	900	0.0048

NMED GW Cleanup Level	0.01	2	0.005	NA	0.05	0.015	0.002	0.05	0.05	NA	0.03
-----------------------	------	---	-------	----	------	-------	-------	------	------	----	------

Notes:
Dup - duplicate sample
J - Estimated concentration
JB - Estimated concentration due to blank contamination
NA - not applicable
ND - not detected
mg/L - milligrams per liter
U - Evaluated to be undetected at the reported concentration
Bolded results exceed the NMED GW Cleanup Level
NMED GW Cleanup Level - New Mexico Environment Department Groundwater Cleanup Levels, New Mexico Administrative Code 20.6.2.3103
* - The first result represents the laboratory reported concentration. The second result was evaluated to be undetected at the reported concentration by the data validator. The result was determined to be a false positive.

TABLE 4-4. GROUNDWATER GENERAL CHEMISTRY ANALYTICAL DATA (2022)
WESTERN REFINING SOUTHWEST LLC, MARATHON WINGATE FACILITY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Alkalinity (mg/L CaCO3)	Bicarbonate as CaCO3 (mg/L CaCO3)	Carbonate (mg/L CaCO3)	Chloride (mg/L)	Nitrate & Nitrite (mg/L)	Nitrogen, Nitrate (mg/L)	Nitrogen, Nitrite (mg/L)	pH (Std Units)	Total Dissolved Solids (mg/L)	Sulfate (mg/L)
WMW-1R	07/13/22	755.1	755.1	ND(2)	460	--	ND(1)	ND(1)	7.48 J	3760	1700
WMW-2	07/13/22	2098	2098	ND(5)	1100	--	ND(1)	ND(1)	7.91 J	3860	ND(5)
WMW-3	07/12/22	1061	1061	ND(2)	1300	ND(1)	--	--	7.76 J	6700	2400
WMW-4	07/13/22	750.6	750.6	ND(2)	190	--	ND(1)	ND(1)	8.02 J	1560	370
WMW-5	07/13/22	717.6	717.6	ND(2)	450	--	0.27 J	ND(1)	7.47 J	4170	2200
WMW-5 Dup	07/13/22	730.8	730.8	ND(2)	450	--	ND(1)	ND(1)	7.73 J	4250	2200
WMW-6	07/13/22	446.6	446.6	ND(2)	65	--	ND(1)	ND(1)	7.99 J	1040	320
WMW-7	07/13/22	692.4	692.4	ND(2)	200	--	ND(1)	ND(1)	8.27 J	2530	1100
WMW-8	07/12/22	477.6	477.6	ND(2)	32	ND(1)	--	--	7.96 J	862	180
WMW-9	07/13/22	1376 J	1376 J	ND(5) R	380	--	ND(1)	ND(1)	8.09 J	2420	19

NMED GW Cleanup Level	NA	NA	NA	250	NA	10	1	6 - 9	1,000	600
Notes: -- - data not available CaCO3 - calcium carbonate Dup - duplicate sample J - Estimated concentration NA - not applicable ND - not detected mg/L - milligrams per liter R - Rejected, Data not usable Std - standard Bolded results exceed the NMED GW Cleanup Level NMED GW Cleanup Level - New Mexico Environment Department Groundwater Cleanup Levels, New Mexico Administrative Code 20.6.2.3103										
ProjectDirect: Analytical Table 4-4. Gen Chem PK:8111 RK:101707										1 of 1

Appendix A. Field Logs

WESTERN REFINING - GALLUP WINGATE FACILITY
2022 ANNUAL GROUNDWATER SAMPLING

WELL ID		TEST PARAMETERS								
WMW-1R		Volumes	TIME	pH	Temperature Degrees (°C)	Conductivity (uS/m)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (mg/L)	ORP (mv)
GAUGE DATE	7/13	Initial	9:31	7.07	13.8	3.611	2.987	2.47	0.43	-12.8
GAUGE TIME		1	9:34	7.07	13.9	3.641	3.004	2.48	0.40	-12.2
DHC (FEET)	—	2	9:37	7.07	13.9	3.642	2.995	2.48	0.39	-12.1
DTW (FEET)	11.12	3								
DTB (FEET)	19.17	4								
		5								
CAPACITY PER FOOT	0.653 - 4"	6								
	0.163 - 2"									
SAMPLING DATA										
SAMPLE DATE	7/13	WEATHER CONDITIONS: Cloudy / 70°F								
DTW (FEET)	11.12	WATER APPEARANCE / ODOR: some clouding / No Odor								
SAMPLE TIME	9:40	COMMENTS:								
SAMPLE LOG										
INSTRUMENTS USED		OIL / WATER INTERFACE PROBE								
		PERISTALTIC PUMP								
		FLOW THROUGH YSI PARAMETER METER								

COMPLETED BY:

Hilario Tejo

SIGNATURE:

Hilario Tejo

WESTERN REFINING - GALLUP WINGATE FACILITY
2022 ANNUAL GROUNDWATER SAMPLING

WELL ID		TEST PARAMETERS								
WMW-2		Volumes	TIME	pH	Temperature Degrees (°C)	Conductivity (uS/m)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (mg/L)	ORP (mv)
GAUGE DATE	7/13	Initial	14:13	6.75	13.6	4.587	3.809	3.20	0.63	-129.4
GAUGE TIME	14:00	1	14:16	6.75	13.8	4.618	3.811	3.20	0.60	-131.0
DHC (FEET)	8.88	2	14:17	6.75	13.7	4.597	3.806	3.20	0.59	-132.5
DTW (FEET)	6.83	3								
DTB (FEET)	20.12	4								
		5								
CAPACITY PER FOOT	0.653 - 4"	6								
	0.163 - 2"									

SAMPLING DATA		
SAMPLE DATE	7/13	WEATHER CONDITIONS: Cloudy / 77°F
DTW (FEET)	6.83	WATER APPEARANCE / ODOR: Clear / Hydrocarbon like. Odor.
SAMPLE TIME	14:23	COMMENTS:

SAMPLE LOG	
INSTRUMENTS USED	OIL / WATER INTERFACE PROBE
	PERISTALTIC PUMP
	FLOW THROUGH YSI PARAMETER METER

COMPLETED BY: Hilario T. Mejia

SIGNATURE: [Signature]

WESTERN REFINING - GALLUP WINGATE FACILITY
2022 ANNUAL GROUNDWATER SAMPLING

WELL ID		TEST PARAMETERS								
WMW-3		Volumes	TIME	pH	Temperature Degrees (°C)	Conductivity (uS/m)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (mg/L)	ORP (mv)
GAUGE DATE	7/12	Initial	1:13	6.93	14.3	3279	2749	2.27	2.43	185.6
GAUGE TIME		1	1:17	6.93	14.1	3298	2714	2.23	2.25	238.6
DHC (FEET)	—	2	1:20	6.93	13.8	3245	2615	2.21	2.28	266.0
DTW (FEET)	8.30	3	1:23	6.93	13.8	3298	2660	2.19	2.10	240.1
DTB (FEET)	10.18	4				3210				
		5								
CAPACITY PER FOOT	0.653 - 4"	6								
	0.163 - 2"									

SAMPLING DATA	
SAMPLE DATE	7/12
	WEATHER CONDITIONS: Sunny, 89°F
DTW (FEET)	8.3
	WATER APPEARANCE / ODOR: Superficial foam / Brown / No Odor
SAMPLE TIME	1:23
	COMMENTS: bar out of fluid, 1/2 A-L

SAMPLE LOG	
INSTRUMENTS USED	OIL / WATER INTERFACE PROBE
	PERISTALTIC PUMP
	FLOW THROUGH YSI PARAMETER METER

COMPLETED BY: Hilario Trejo

SIGNATURE: Hilario Trejo

WESTERN REFINING - GALLUP WINGATE FACILITY
2022 ANNUAL GROUNDWATER SAMPLING

WELL ID		TEST PARAMETERS								
WMW-4		Volumes	TIME	pH	Temperature Degrees (°C)	Conductivity (uS/m)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (mg/L)	ORP (mv)
GAUGE DATE	7/13	Initial	13:36	6.45	13.5	1.823	1.520	1.21	1.70	-160.5
GAUGE TIME	13:23	1	13:39	6.46	13.5	1.816	1.513	1.20	1.65	-158.5
DHC (FEET)	-	2	13:42	6.47	13.5	1.819	1.513	1.20	1.64	-158.6
DTW (FEET)	8.64	3								
DTB (FEET)	21.03	4								
		5								
CAPACITY PER FOOT	0.653 - 4"	6								
	0.163 - 2"									

SAMPLING DATA		
SAMPLE DATE	7/13	WEATHER CONDITIONS:
DTW (FEET)	8.64	WATER APPEARANCE / ODOR:
SAMPLE TIME	13:45	COMMENTS:

SAMPLE LOG	
INSTRUMENTS USED	OIL / WATER INTERFACE PROBE
	PERISTALTIC PUMP
	FLOW THROUGH YSI PARAMETER METER

COMPLETED BY: Hilario Trujillo

SIGNATURE: [Signature]

WESTERN REFINING - GALLUP WINGATE FACILITY

2022 ANNUAL GROUNDWATER SAMPLING

WELL ID		TEST PARAMETERS								
WMW-5		Volumes	TIME	pH	Temperature Degrees (°C)	Conductivity (uS/m)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (mg/L)	ORP (mv)
GAUGE DATE	7/13	Initial	10:17	7.10	14.02	4.400	3.617	3.03	0.36	-12.1
GAUGE TIME	9:56	1	10:20	7.10	14.08	4.384	3.566	3.01	0.34	-12.5
DHC (FEET)	—	2	10:23	7.10	14.12	4.393	3.558	3.00	0.32	-12.6
DTW (FEET)	7.42	3								
DTB (FEET)	20.14	4								
		5								
CAPACITY PER FOOT	0.653 - 4"	6								
	0.163 - 2"									
SAMPLING DATA										
SAMPLE DATE	7/13	WEATHER CONDITIONS: clear / No Odor								
DTW (FEET)	7.42	WATER APPEARANCE / ODOR: Sunny 82°F								
SAMPLE TIME	10:25	COMMENTS: DUP + FB Collected								
SAMPLE LOG										
INSTRUMENTS USED		OIL / WATER INTERFACE PROBE								
		PERISTALTIC PUMP								
		FLOW THROUGH YSI PARAMETER METER								

COMPLETED BY: Hilario TerejaSIGNATURE: [Signature]

WESTERN REFINING - GALLUP WINGATE FACILITY

2022 ANNUAL GROUNDWATER SAMPLING

WELL ID		TEST PARAMETERS								
WMW-6		Volumes	TIME	pH	Temperature Degrees (°C)	Conductivity (uS/m)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (mg/L)	ORP (mv)
GAUGE DATE	7/13	Initial	8:47	6.42	10.9	1.085	0.962	0.75	0.99	-4.4
GAUGE TIME	8:15	1	8:50	6.43	10.9	1.084	0.962	0.75	0.97	-4.1
DHC (FEET)	5.60	2	8:53	6.43	11.2	1.081	0.959	0.75	0.96	-4.6
DTW (FEET)	13.14	3								
DTB (FEET)	36.75	4								
		5								
CAPACITY PER FOOT	0.653 - 4"	6								
	0.163 - 2"									
SAMPLING DATA										
SAMPLE DATE	7/13	WEATHER CONDITIONS: cloudy / 63°F								
DTW (FEET)	13.14	WATER APPEARANCE / ODOR: Clear No Odor								
SAMPLE TIME	8:55	COMMENTS:								
SAMPLE LOG										
INSTRUMENTS USED		OIL / WATER INTERFACE PROBE								
		PERISTALTIC PUMP								
		FLOW THROUGH YSI PARAMETER METER								

COMPLETED BY: Hilario TrejoSIGNATURE: [Signature]

WESTERN REFINING - GALLUP WINGATE FACILITY

2022 ANNUAL GROUNDWATER SAMPLING

WELL ID		TEST PARAMETERS								
WMW-7		Volumes	TIME	pH	Temperature Degrees (°C)	Conductivity (uS/m)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (mg/L)	ORP (mv)
GAUGE DATE	7/13	Initial	11:08	5.91	12.85	2.670	2.260	1.84	20.85	64.8
GAUGE TIME		1	11:11	5.91	12.71	2.655	2.200	1.84	20.69	66.1
DHC (FEET)	—	2	11:14	5.91	12.79	2.663	2.259	1.84	20.58	67.0
DTW (FEET)	9.20	3								
DTB (FEET)	17.84	4								
		5								
CAPACITY PER FOOT	0.653 - 4"	6								
	0.163 - 2"									
SAMPLING DATA										
SAMPLE DATE	7/13	WEATHER CONDITIONS: Clouds / 79°F								
DTW (FEET)	9.2	WATER APPEARANCE / ODOR: clear / No Odor								
SAMPLE TIME	11:15	COMMENTS: Soft Bottom								
SAMPLE LOG										
INSTRUMENTS USED		OIL / WATER INTERFACE PROBE								
		PERISTALTIC PUMP								
		FLOW THROUGH YSI PARAMETER METER								

COMPLETED BY: Hilario TrujilloSIGNATURE: [Signature]

WESTERN REFINING - GALLUP WINGATE FACILITY

2022 ANNUAL GROUNDWATER SAMPLING

WELL ID		TEST PARAMETERS								
WMW-8		Volumes	TIME	pH	Temperature Degrees (°C)	Conductivity (uS/m)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (mg/L)	ORP (mv)
GAUGE DATE	7/12	Initial	12:04	7.62	13.7	0.99	643.5	0.47	4.03	87.8
GAUGE TIME	11:22	1	12:08	7.62	14.3	0.99	643.5	0.47	0.98	78.5
DHC (FEET)		2	12:13	7.63	14.3	0.98	637.0	0.47	0.92	62.0
DTW (FEET)	8.34	3	12:16	7.63	13.9	0.98	637.0	0.49	0.98	58.0
DTB (FEET)	39.0	4	12:19	7.63	14.3	0.97	643.5	0.47	0.91	57.0
		5								
CAPACITY PER FOOT	0.653 - 4"	6								
	0.163 - 2"									
SAMPLING DATA										
SAMPLE DATE	7/12	WEATHER CONDITIONS: Sunny								
DTW (FEET)	8.34	WATER APPEARANCE / ODOR: Clear / No Odor								
SAMPLE TIME	12:20	COMMENTS:								
SAMPLE LOG										
INSTRUMENTS USED		OIL / WATER INTERFACE PROBE								
		PERISTALTIC PUMP								
		FLOW THROUGH YSI PARAMETER METER								

COMPLETED BY:

SIGNATURE:

WESTERN REFINING - GALLUP WINGATE FACILITY
2022 ANNUAL GROUNDWATER SAMPLING

WELL ID		TEST PARAMETERS								
WMW-9		Volumes	TIME	pH	Temperature Degrees (°C)	Conductivity (uS/m)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (mg/L)	ORP (mv)
GAUGE DATE	7/13	Initial	11:43	6.23	13.2	2.574	2.161	1.75	0.38	-188.9
GAUGE TIME	11:30	1	11:46	6.22	13.2	2.461	2.163	1.75	0.35	-195.0
DHC (FEET)	NA	2	11:49	6.22	13.1	2.569	2.159	1.75	0.35	-195.2
DTW (FEET)	7.71	3								
DTB (FEET)	15.31	4								
		5								
CAPACITY PER FOOT	0.653 - 4"	6								
	0.163 - 2"									
SAMPLING DATA										
SAMPLE DATE	7/13	WEATHER CONDITIONS: Cloudy, 77°F								
DTW (FEET)	7.71	WATER APPEARANCE / ODOR: Cloudy, Suspended fines								
SAMPLE TIME	11:50	COMMENTS: Hydrocarbon-like character								
SAMPLE LOG										
INSTRUMENTS USED		OIL / WATER INTERFACE PROBE								
		PERISTALTIC PUMP								
		FLOW THROUGH YSI PARAMETER METER								

COMPLETED BY



SIGNATURE:



Appendix B. Laboratory Reports



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

August 01, 2022

Lesli Alexander
Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX:

RE: Wingate 2022 Annual Groundwater Sampling

OrderNo.: 2207654

Dear Lesli Alexander:

Hall Environmental Analysis Laboratory received 13 sample(s) on 7/14/2022 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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109



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

Case Narrative

WO#: 2207654
Date: 8/1/2022

CLIENT: Marathon

Project: Wingate 2022 Annual Groundwater Sampling

Analytical Notes Regarding EPA Method 8270:

"S" flags denote a surrogate or spike recovery outside of the standard limits.

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-8

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/12/2022 12:20:00 PM

Lab ID: 2207654-001

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: bcv
Uranium	0.013	0.00050		mg/L	1	7/20/2022 3:14:39 PM	68844
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	32	5.0		mg/L	10	7/14/2022 5:36:21 PM	R89511
Sulfate	180	5.0		mg/L	10	7/14/2022 5:36:21 PM	R89511
Nitrate+Nitrite as N	ND	1.0		mg/L	5	7/27/2022 5:33:06 PM	R89840
SM2320B: ALKALINITY							Analyst: CAS
Bicarbonate (As CaCO ₃)	477.6	20.00		mg/L Ca	1	7/19/2022 2:37:00 PM	R89632
Carbonate (As CaCO ₃)	ND	2.000		mg/L Ca	1	7/19/2022 2:37:00 PM	R89632
Total Alkalinity (as CaCO ₃)	477.6	20.00		mg/L Ca	1	7/19/2022 2:37:00 PM	R89632
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	862	20.0	*	mg/L	1	7/22/2022 10:48:00 AM	68853
SM4500-H+B / 9040C: PH							Analyst: CAS
pH	7.96		H	pH units	1	7/19/2022 2:37:00 PM	R89632
EPA METHOD 7470A: MERCURY							Analyst: VP
Mercury	ND	0.00020		mg/L	1	7/19/2022 12:51:49 PM	68877
EPA METHOD 6010B: DISSOLVED METALS							Analyst: JRR
Arsenic	ND	0.020		mg/L	1	7/28/2022 10:55:48 AM	A89895
Barium	0.13	0.020		mg/L	1	7/28/2022 10:55:48 AM	A89895
Cadmium	ND	0.0020		mg/L	1	7/28/2022 10:55:48 AM	A89895
Calcium	34	1.0		mg/L	1	7/28/2022 10:55:48 AM	A89895
Chromium	ND	0.0060		mg/L	1	7/28/2022 10:55:48 AM	A89895
Lead	ND	0.020		mg/L	1	7/28/2022 10:55:48 AM	A89895
Selenium	ND	0.050		mg/L	1	7/28/2022 10:55:48 AM	A89895
Silver	ND	0.0050		mg/L	1	7/28/2022 10:55:48 AM	A89895
Sodium	280	5.0		mg/L	5	7/28/2022 12:59:59 PM	A89895
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Acenaphthylene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Aniline	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Anthracene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Azobenzene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Benz(a)anthracene	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
Benzo(a)pyrene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Benzo(b)fluoranthene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
Benzo(k)fluoranthene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 2 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-8

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/12/2022 12:20:00 PM

Lab ID: 2207654-001

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Benzoic acid	ND	20		µg/L	1	7/21/2022 4:23:59 PM	68843
Benzyl alcohol	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Bis(2-chloroethyl)ether	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
4-Bromophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Butyl benzyl phthalate	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Carbazole	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
4-Chloroaniline	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
2-Chloronaphthalene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
2-Chlorophenol	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Chrysene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Di-n-butyl phthalate	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Di-n-octyl phthalate	ND	20		µg/L	1	7/21/2022 4:23:59 PM	68843
Dibenz(a,h)anthracene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Dibenzofuran	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
1,2-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
1,3-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
1,4-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
3,3'-Dichlorobenzidine	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Diethyl phthalate	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Dimethyl phthalate	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
2,4-Dichlorophenol	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
2,4-Dimethylphenol	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
2,4-Dinitrophenol	ND	20		µg/L	1	7/21/2022 4:23:59 PM	68843
2,4-Dinitrotoluene	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
2,6-Dinitrotoluene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Fluoranthene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Fluorene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Hexachlorobenzene	ND	20		µg/L	1	7/21/2022 4:23:59 PM	68843
Hexachlorobutadiene	ND	20		µg/L	1	7/21/2022 4:23:59 PM	68843
Hexachlorocyclopentadiene	ND	20		µg/L	1	7/21/2022 4:23:59 PM	68843
Hexachloroethane	ND	20		µg/L	1	7/21/2022 4:23:59 PM	68843
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Isophorone	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 3 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-8

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/12/2022 12:20:00 PM

Lab ID: 2207654-001

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
1-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
2-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
2-Methylphenol	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
3+4-Methylphenol	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
N-Nitrosodimethylamine	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
N-Nitrosodiphenylamine	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Naphthalene	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
2-Nitroaniline	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
3-Nitroaniline	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
4-Nitroaniline	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
Nitrobenzene	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
2-Nitrophenol	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
4-Nitrophenol	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Pentachlorophenol	ND	40		µg/L	1	7/21/2022 4:23:59 PM	68843
Phenanthrene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Phenol	ND	20		µg/L	1	7/21/2022 4:23:59 PM	68843
Pyrene	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Pyridine	ND	40		µg/L	1	7/21/2022 4:23:59 PM	68843
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	7/21/2022 4:23:59 PM	68843
2,4,5-Trichlorophenol	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
2,4,6-Trichlorophenol	ND	10		µg/L	1	7/21/2022 4:23:59 PM	68843
Surr: 2-Fluorophenol	65.4	29.4-87.7		%Rec	1	7/21/2022 4:23:59 PM	68843
Surr: Phenol-d5	50.9	28.5-64.7		%Rec	1	7/21/2022 4:23:59 PM	68843
Surr: 2,4,6-Tribromophenol	52.8	18.6-129		%Rec	1	7/21/2022 4:23:59 PM	68843
Surr: Nitrobenzene-d5	82.8	36.9-103		%Rec	1	7/21/2022 4:23:59 PM	68843
Surr: 2-Fluorobiphenyl	74.6	38.1-99.9		%Rec	1	7/21/2022 4:23:59 PM	68843
Surr: 4-Terphenyl-d14	102	48-155		%Rec	1	7/21/2022 4:23:59 PM	68843
EPA METHOD 8260B: VOLATILES							Analyst: JR
Benzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Toluene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Ethylbenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Naphthalene	ND	2.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 4:17:48 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 4 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-8

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/12/2022 12:20:00 PM

Lab ID: 2207654-001

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
2-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Acetone	ND	10		µg/L	1	7/15/2022 4:17:48 PM	R89550
Bromobenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Bromodichloromethane	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Bromoform	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Bromomethane	ND	3.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
2-Butanone	ND	10		µg/L	1	7/15/2022 4:17:48 PM	R89550
Carbon disulfide	ND	10		µg/L	1	7/15/2022 4:17:48 PM	R89550
Carbon Tetrachloride	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Chlorobenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Chloroethane	ND	2.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Chloroform	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Chloromethane	ND	3.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
2-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
4-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
cis-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Dibromochloromethane	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Dibromomethane	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,1-Dichloroethane	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,1-Dichloroethene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,2-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,3-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
2,2-Dichloropropane	ND	2.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,1-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Hexachlorobutadiene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
2-Hexanone	ND	10		µg/L	1	7/15/2022 4:17:48 PM	R89550
Isopropylbenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
4-Isopropyltoluene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
4-Methyl-2-pentanone	ND	10		µg/L	1	7/15/2022 4:17:48 PM	R89550
Methylene Chloride	ND	3.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
n-Butylbenzene	ND	3.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
n-Propylbenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
sec-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 5 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-8

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/12/2022 12:20:00 PM

Lab ID: 2207654-001

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
Styrene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
tert-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
trans-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Trichlorofluoromethane	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Vinyl chloride	ND	1.0		µg/L	1	7/15/2022 4:17:48 PM	R89550
Xylenes, Total	ND	1.5		µg/L	1	7/15/2022 4:17:48 PM	R89550
Surr: 1,2-Dichloroethane-d4	113	70-130		%Rec	1	7/15/2022 4:17:48 PM	R89550
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	7/15/2022 4:17:48 PM	R89550
Surr: Dibromofluoromethane	122	70-130		%Rec	1	7/15/2022 4:17:48 PM	R89550
Surr: Toluene-d8	104	70-130		%Rec	1	7/15/2022 4:17:48 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 6 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-3

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/12/2022 1:23:00 PM

Lab ID: 2207654-002

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: bcv
Uranium	0.054	0.0025	*	mg/L	5	7/21/2022 12:41:31 PM	68844
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	1300	50	*	mg/L	100	7/14/2022 6:14:57 PM	R89511
Sulfate	2400	50	*	mg/L	100	7/14/2022 6:14:57 PM	R89511
Nitrate+Nitrite as N	ND	1.0		mg/L	5	7/27/2022 5:45:58 PM	R89840
SM2320B: ALKALINITY							Analyst: CAS
Bicarbonate (As CaCO ₃)	1061	20.00		mg/L Ca	1	7/19/2022 2:56:01 PM	R89632
Carbonate (As CaCO ₃)	ND	2.000		mg/L Ca	1	7/19/2022 2:56:01 PM	R89632
Total Alkalinity (as CaCO ₃)	1061	20.00		mg/L Ca	1	7/19/2022 2:56:01 PM	R89632
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	6700	200	*D	mg/L	1	7/22/2022 10:48:00 AM	68853
SM4500-H+B / 9040C: PH							Analyst: CAS
pH	7.76		H	pH units	1	7/19/2022 2:56:01 PM	R89632
EPA METHOD 7470A: MERCURY							Analyst: VP
Mercury	ND	0.00020		mg/L	1	7/19/2022 12:53:57 PM	68877
EPA METHOD 6010B: DISSOLVED METALS							Analyst: JRR
Arsenic	ND	0.020		mg/L	1	7/28/2022 10:59:06 AM	A89895
Barium	0.043	0.020		mg/L	1	7/28/2022 10:59:06 AM	A89895
Cadmium	ND	0.0020		mg/L	1	7/28/2022 10:59:06 AM	A89895
Calcium	170	5.0		mg/L	5	7/28/2022 1:03:11 PM	A89895
Chromium	0.0063	0.0060		mg/L	1	7/28/2022 10:59:06 AM	A89895
Lead	ND	0.020		mg/L	1	7/28/2022 10:59:06 AM	A89895
Selenium	ND	0.050		mg/L	1	7/28/2022 10:59:06 AM	A89895
Silver	ND	0.0050		mg/L	1	7/28/2022 10:59:06 AM	A89895
Sodium	2100	50		mg/L	50	7/28/2022 1:15:08 PM	A89895
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Acenaphthylene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Aniline	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Anthracene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Azobenzene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Benz(a)anthracene	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
Benzo(a)pyrene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Benzo(b)fluoranthene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
Benzo(k)fluoranthene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 7 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-3

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/12/2022 1:23:00 PM

Lab ID: 2207654-002

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Benzoic acid	ND	20		µg/L	1	7/21/2022 5:06:53 PM	68843
Benzyl alcohol	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Bis(2-chloroethyl)ether	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
4-Bromophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Butyl benzyl phthalate	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Carbazole	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
4-Chloroaniline	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
2-Chloronaphthalene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
2-Chlorophenol	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Chrysene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Di-n-butyl phthalate	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Di-n-octyl phthalate	ND	20		µg/L	1	7/21/2022 5:06:53 PM	68843
Dibenz(a,h)anthracene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Dibenzofuran	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
1,2-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
1,3-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
1,4-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
3,3'-Dichlorobenzidine	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Diethyl phthalate	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Dimethyl phthalate	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
2,4-Dichlorophenol	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
2,4-Dimethylphenol	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
2,4-Dinitrophenol	ND	20		µg/L	1	7/21/2022 5:06:53 PM	68843
2,4-Dinitrotoluene	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
2,6-Dinitrotoluene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Fluoranthene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Fluorene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Hexachlorobenzene	ND	20		µg/L	1	7/21/2022 5:06:53 PM	68843
Hexachlorobutadiene	ND	20		µg/L	1	7/21/2022 5:06:53 PM	68843
Hexachlorocyclopentadiene	ND	20		µg/L	1	7/21/2022 5:06:53 PM	68843
Hexachloroethane	ND	20		µg/L	1	7/21/2022 5:06:53 PM	68843
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Isophorone	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 8 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-3

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/12/2022 1:23:00 PM

Lab ID: 2207654-002

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
1-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
2-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
2-Methylphenol	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
3+4-Methylphenol	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
N-Nitrosodimethylamine	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
N-Nitrosodiphenylamine	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Naphthalene	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
2-Nitroaniline	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
3-Nitroaniline	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
4-Nitroaniline	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
Nitrobenzene	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
2-Nitrophenol	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
4-Nitrophenol	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Pentachlorophenol	ND	40		µg/L	1	7/21/2022 5:06:53 PM	68843
Phenanthrene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Phenol	ND	20		µg/L	1	7/21/2022 5:06:53 PM	68843
Pyrene	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Pyridine	ND	40		µg/L	1	7/21/2022 5:06:53 PM	68843
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	7/21/2022 5:06:53 PM	68843
2,4,5-Trichlorophenol	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
2,4,6-Trichlorophenol	ND	10		µg/L	1	7/21/2022 5:06:53 PM	68843
Surr: 2-Fluorophenol	40.0	29.4-87.7		%Rec	1	7/21/2022 5:06:53 PM	68843
Surr: Phenol-d5	42.5	28.5-64.7		%Rec	1	7/21/2022 5:06:53 PM	68843
Surr: 2,4,6-Tribromophenol	16.3	18.6-129	S	%Rec	1	7/21/2022 5:06:53 PM	68843
Surr: Nitrobenzene-d5	80.2	36.9-103		%Rec	1	7/21/2022 5:06:53 PM	68843
Surr: 2-Fluorobiphenyl	74.1	38.1-99.9		%Rec	1	7/21/2022 5:06:53 PM	68843
Surr: 4-Terphenyl-d14	99.3	48-155		%Rec	1	7/21/2022 5:06:53 PM	68843
EPA METHOD 8260B: VOLATILES							Analyst: JR
Benzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Toluene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Ethylbenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Naphthalene	ND	2.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 5:44:33 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 9 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-3

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/12/2022 1:23:00 PM

Lab ID: 2207654-002

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
2-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Acetone	ND	10		µg/L	1	7/15/2022 5:44:33 PM	R89550
Bromobenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Bromodichloromethane	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Bromoform	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Bromomethane	ND	3.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
2-Butanone	ND	10		µg/L	1	7/15/2022 5:44:33 PM	R89550
Carbon disulfide	ND	10		µg/L	1	7/15/2022 5:44:33 PM	R89550
Carbon Tetrachloride	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Chlorobenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Chloroethane	ND	2.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Chloroform	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Chloromethane	ND	3.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
2-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
4-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
cis-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Dibromochloromethane	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Dibromomethane	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,1-Dichloroethane	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,1-Dichloroethene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,2-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,3-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
2,2-Dichloropropane	ND	2.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,1-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Hexachlorobutadiene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
2-Hexanone	ND	10		µg/L	1	7/15/2022 5:44:33 PM	R89550
Isopropylbenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
4-Isopropyltoluene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
4-Methyl-2-pentanone	ND	10		µg/L	1	7/15/2022 5:44:33 PM	R89550
Methylene Chloride	ND	3.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
n-Butylbenzene	ND	3.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
n-Propylbenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
sec-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 10 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-3

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/12/2022 1:23:00 PM

Lab ID: 2207654-002

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
Styrene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
tert-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
trans-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Trichlorofluoromethane	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Vinyl chloride	ND	1.0		µg/L	1	7/15/2022 5:44:33 PM	R89550
Xylenes, Total	ND	1.5		µg/L	1	7/15/2022 5:44:33 PM	R89550
Surr: 1,2-Dichloroethane-d4	113	70-130		%Rec	1	7/15/2022 5:44:33 PM	R89550
Surr: 4-Bromofluorobenzene	110	70-130		%Rec	1	7/15/2022 5:44:33 PM	R89550
Surr: Dibromofluoromethane	120	70-130		%Rec	1	7/15/2022 5:44:33 PM	R89550
Surr: Toluene-d8	99.7	70-130		%Rec	1	7/15/2022 5:44:33 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 11 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-6

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 8:55:00 AM

Lab ID: 2207654-003

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: bcv
Uranium	0.0090	0.00050		mg/L	1	7/20/2022 3:19:32 PM	68844
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	65	5.0		mg/L	10	7/14/2022 6:27:50 PM	R89511
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	7/14/2022 6:27:50 PM	R89511
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	7/14/2022 6:27:50 PM	R89511
Sulfate	320	5.0	*	mg/L	10	7/14/2022 6:27:50 PM	R89511
SM2320B: ALKALINITY							Analyst: CAS
Bicarbonate (As CaCO ₃)	446.6	20.00		mg/L Ca	1	7/19/2022 3:32:40 PM	R89632
Carbonate (As CaCO ₃)	ND	2.000		mg/L Ca	1	7/19/2022 3:32:40 PM	R89632
Total Alkalinity (as CaCO ₃)	446.6	20.00		mg/L Ca	1	7/19/2022 3:32:40 PM	R89632
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1040	20.0	*	mg/L	1	7/22/2022 10:48:00 AM	68853
SM4500-H+B / 9040C: PH							Analyst: CAS
pH	7.99		H	pH units	1	7/19/2022 3:32:40 PM	R89632
EPA METHOD 7470A: MERCURY							Analyst: VP
Mercury	ND	0.00020		mg/L	1	7/19/2022 12:56:06 PM	68877
EPA METHOD 6010B: DISSOLVED METALS							Analyst: JRR
Arsenic	ND	0.020		mg/L	1	7/28/2022 11:02:36 AM	A89895
Barium	0.034	0.020		mg/L	1	7/28/2022 11:02:36 AM	A89895
Cadmium	ND	0.0020		mg/L	1	7/28/2022 11:02:36 AM	A89895
Calcium	36	1.0		mg/L	1	7/28/2022 11:02:36 AM	A89895
Chromium	ND	0.0060		mg/L	1	7/28/2022 11:02:36 AM	A89895
Lead	ND	0.020		mg/L	1	7/28/2022 11:02:36 AM	A89895
Selenium	ND	0.050		mg/L	1	7/28/2022 11:02:36 AM	A89895
Silver	ND	0.0050		mg/L	1	7/28/2022 11:02:36 AM	A89895
Sodium	340	5.0		mg/L	5	7/28/2022 1:18:23 PM	A89895
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Acenaphthylene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Aniline	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Anthracene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Azobenzene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Benz(a)anthracene	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
Benzo(a)pyrene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Benzo(b)fluoranthene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 12 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-6

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 8:55:00 AM

Lab ID: 2207654-003

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Benzo(k)fluoranthene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Benzoic acid	ND	20		µg/L	1	7/21/2022 5:51:03 PM	68843
Benzyl alcohol	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Bis(2-chloroethyl)ether	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
4-Bromophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Butyl benzyl phthalate	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Carbazole	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
4-Chloroaniline	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
2-Chloronaphthalene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
2-Chlorophenol	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Chrysene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Di-n-butyl phthalate	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Di-n-octyl phthalate	ND	20		µg/L	1	7/21/2022 5:51:03 PM	68843
Dibenz(a,h)anthracene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Dibenzofuran	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
1,2-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
1,3-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
1,4-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
3,3'-Dichlorobenzidine	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Diethyl phthalate	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Dimethyl phthalate	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
2,4-Dichlorophenol	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
2,4-Dimethylphenol	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
2,4-Dinitrophenol	ND	20		µg/L	1	7/21/2022 5:51:03 PM	68843
2,4-Dinitrotoluene	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
2,6-Dinitrotoluene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Fluoranthene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Fluorene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Hexachlorobenzene	ND	20		µg/L	1	7/21/2022 5:51:03 PM	68843
Hexachlorobutadiene	ND	20		µg/L	1	7/21/2022 5:51:03 PM	68843
Hexachlorocyclopentadiene	ND	20		µg/L	1	7/21/2022 5:51:03 PM	68843
Hexachloroethane	ND	20		µg/L	1	7/21/2022 5:51:03 PM	68843
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 13 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-6

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 8:55:00 AM

Lab ID: 2207654-003

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Isophorone	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
1-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
2-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
2-Methylphenol	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
3+4-Methylphenol	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
N-Nitrosodimethylamine	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
N-Nitrosodiphenylamine	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Naphthalene	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
2-Nitroaniline	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
3-Nitroaniline	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
4-Nitroaniline	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
Nitrobenzene	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
2-Nitrophenol	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
4-Nitrophenol	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Pentachlorophenol	ND	40		µg/L	1	7/21/2022 5:51:03 PM	68843
Phenanthrene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Phenol	ND	20		µg/L	1	7/21/2022 5:51:03 PM	68843
Pyrene	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Pyridine	ND	40		µg/L	1	7/21/2022 5:51:03 PM	68843
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	7/21/2022 5:51:03 PM	68843
2,4,5-Trichlorophenol	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
2,4,6-Trichlorophenol	ND	10		µg/L	1	7/21/2022 5:51:03 PM	68843
Surr: 2-Fluorophenol	61.2	29.4-87.7		%Rec	1	7/21/2022 5:51:03 PM	68843
Surr: Phenol-d5	44.9	28.5-64.7		%Rec	1	7/21/2022 5:51:03 PM	68843
Surr: 2,4,6-Tribromophenol	74.1	18.6-129		%Rec	1	7/21/2022 5:51:03 PM	68843
Surr: Nitrobenzene-d5	75.9	36.9-103		%Rec	1	7/21/2022 5:51:03 PM	68843
Surr: 2-Fluorobiphenyl	68.9	38.1-99.9		%Rec	1	7/21/2022 5:51:03 PM	68843
Surr: 4-Terphenyl-d14	106	48-155		%Rec	1	7/21/2022 5:51:03 PM	68843
EPA METHOD 8260B: VOLATILES							Analyst: JR
Benzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Toluene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Ethylbenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Naphthalene	ND	2.0		µg/L	1	7/15/2022 6:13:28 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 14 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-6

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 8:55:00 AM

Lab ID: 2207654-003

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
1-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
2-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Acetone	ND	10		µg/L	1	7/15/2022 6:13:28 PM	R89550
Bromobenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Bromodichloromethane	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Bromoform	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Bromomethane	ND	3.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
2-Butanone	ND	10		µg/L	1	7/15/2022 6:13:28 PM	R89550
Carbon disulfide	ND	10		µg/L	1	7/15/2022 6:13:28 PM	R89550
Carbon Tetrachloride	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Chlorobenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Chloroethane	ND	2.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Chloroform	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Chloromethane	ND	3.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
2-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
4-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
cis-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Dibromochloromethane	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Dibromomethane	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,1-Dichloroethane	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,1-Dichloroethene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,2-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,3-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
2,2-Dichloropropane	ND	2.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,1-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Hexachlorobutadiene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
2-Hexanone	ND	10		µg/L	1	7/15/2022 6:13:28 PM	R89550
Isopropylbenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
4-Isopropyltoluene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
4-Methyl-2-pentanone	ND	10		µg/L	1	7/15/2022 6:13:28 PM	R89550
Methylene Chloride	ND	3.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
n-Butylbenzene	ND	3.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
n-Propylbenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 15 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-6

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 8:55:00 AM

Lab ID: 2207654-003

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
sec-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Styrene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
tert-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
trans-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Trichlorofluoromethane	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Vinyl chloride	ND	1.0		µg/L	1	7/15/2022 6:13:28 PM	R89550
Xylenes, Total	ND	1.5		µg/L	1	7/15/2022 6:13:28 PM	R89550
Surr: 1,2-Dichloroethane-d4	115	70-130		%Rec	1	7/15/2022 6:13:28 PM	R89550
Surr: 4-Bromofluorobenzene	111	70-130		%Rec	1	7/15/2022 6:13:28 PM	R89550
Surr: Dibromofluoromethane	124	70-130		%Rec	1	7/15/2022 6:13:28 PM	R89550
Surr: Toluene-d8	98.9	70-130		%Rec	1	7/15/2022 6:13:28 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 16 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-1R

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 9:40:00 AM

Lab ID: 2207654-004

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: bcv
Uranium	0.029	0.0025		mg/L	5	7/21/2022 12:43:57 PM	68844
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	460	50	*	mg/L	100	7/14/2022 7:32:13 PM	R89511
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	7/14/2022 7:19:20 PM	R89511
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	7/14/2022 7:19:20 PM	R89511
Sulfate	1700	50	*	mg/L	100	7/14/2022 7:32:13 PM	R89511
SM2320B: ALKALINITY							Analyst: CAS
Bicarbonate (As CaCO ₃)	755.1	20.00		mg/L Ca	1	7/19/2022 3:50:51 PM	R89632
Carbonate (As CaCO ₃)	ND	2.000		mg/L Ca	1	7/19/2022 3:50:51 PM	R89632
Total Alkalinity (as CaCO ₃)	755.1	20.00		mg/L Ca	1	7/19/2022 3:50:51 PM	R89632
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3760	100	*D	mg/L	1	7/22/2022 10:48:00 AM	68853
SM4500-H+B / 9040C: PH							Analyst: CAS
pH	7.48		H	pH units	1	7/19/2022 3:50:51 PM	R89632
EPA METHOD 7470A: MERCURY							Analyst: VP
Mercury	ND	0.00020		mg/L	1	7/19/2022 12:58:15 PM	68877
EPA METHOD 6010B: DISSOLVED METALS							Analyst: JRR
Arsenic	0.023	0.020		mg/L	1	7/28/2022 11:05:54 AM	A89895
Barium	0.070	0.020		mg/L	1	7/28/2022 11:05:54 AM	A89895
Cadmium	ND	0.0020		mg/L	1	7/28/2022 11:05:54 AM	A89895
Calcium	340	10		mg/L	10	7/28/2022 1:21:36 PM	A89895
Chromium	ND	0.0060		mg/L	1	7/28/2022 11:05:54 AM	A89895
Lead	ND	0.020		mg/L	1	7/28/2022 11:05:54 AM	A89895
Selenium	ND	0.050		mg/L	1	7/28/2022 11:05:54 AM	A89895
Silver	0.0065	0.0050		mg/L	1	7/28/2022 11:05:54 AM	A89895
Sodium	900	10		mg/L	10	7/28/2022 1:21:36 PM	A89895
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Acenaphthylene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Aniline	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Anthracene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Azobenzene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Benz(a)anthracene	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
Benzo(a)pyrene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Benzo(b)fluoranthene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843

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 Quantitative 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

Page 17 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-1R

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 9:40:00 AM

Lab ID: 2207654-004

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Benzo(k)fluoranthene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Benzoic acid	ND	20		µg/L	1	7/21/2022 6:36:00 PM	68843
Benzyl alcohol	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Bis(2-chloroethyl)ether	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
4-Bromophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Butyl benzyl phthalate	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Carbazole	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
4-Chloroaniline	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
2-Chloronaphthalene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
2-Chlorophenol	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Chrysene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Di-n-butyl phthalate	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Di-n-octyl phthalate	ND	20		µg/L	1	7/21/2022 6:36:00 PM	68843
Dibenz(a,h)anthracene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Dibenzofuran	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
1,2-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
1,3-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
1,4-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
3,3'-Dichlorobenzidine	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Diethyl phthalate	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Dimethyl phthalate	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
2,4-Dichlorophenol	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
2,4-Dimethylphenol	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
2,4-Dinitrophenol	ND	20		µg/L	1	7/21/2022 6:36:00 PM	68843
2,4-Dinitrotoluene	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
2,6-Dinitrotoluene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Fluoranthene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Fluorene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Hexachlorobenzene	ND	20		µg/L	1	7/21/2022 6:36:00 PM	68843
Hexachlorobutadiene	ND	20		µg/L	1	7/21/2022 6:36:00 PM	68843
Hexachlorocyclopentadiene	ND	20		µg/L	1	7/21/2022 6:36:00 PM	68843
Hexachloroethane	ND	20		µg/L	1	7/21/2022 6:36:00 PM	68843
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 18 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-1R

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 9:40:00 AM

Lab ID: 2207654-004

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Isophorone	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
1-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
2-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
2-Methylphenol	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
3+4-Methylphenol	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
N-Nitrosodimethylamine	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
N-Nitrosodiphenylamine	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Naphthalene	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
2-Nitroaniline	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
3-Nitroaniline	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
4-Nitroaniline	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
Nitrobenzene	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
2-Nitrophenol	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
4-Nitrophenol	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Pentachlorophenol	ND	40		µg/L	1	7/21/2022 6:36:00 PM	68843
Phenanthrene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Phenol	ND	20		µg/L	1	7/21/2022 6:36:00 PM	68843
Pyrene	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Pyridine	ND	40		µg/L	1	7/21/2022 6:36:00 PM	68843
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	7/21/2022 6:36:00 PM	68843
2,4,5-Trichlorophenol	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
2,4,6-Trichlorophenol	ND	10		µg/L	1	7/21/2022 6:36:00 PM	68843
Surr: 2-Fluorophenol	40.2	29.4-87.7		%Rec	1	7/21/2022 6:36:00 PM	68843
Surr: Phenol-d5	40.1	28.5-64.7		%Rec	1	7/21/2022 6:36:00 PM	68843
Surr: 2,4,6-Tribromophenol	19.8	18.6-129		%Rec	1	7/21/2022 6:36:00 PM	68843
Surr: Nitrobenzene-d5	69.4	36.9-103		%Rec	1	7/21/2022 6:36:00 PM	68843
Surr: 2-Fluorobiphenyl	62.8	38.1-99.9		%Rec	1	7/21/2022 6:36:00 PM	68843
Surr: 4-Terphenyl-d14	94.3	48-155		%Rec	1	7/21/2022 6:36:00 PM	68843
EPA METHOD 8260B: VOLATILES							Analyst: JR
Benzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Toluene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Ethylbenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Naphthalene	ND	2.0		µg/L	1	7/15/2022 6:42:19 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 19 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-1R

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 9:40:00 AM

Lab ID: 2207654-004

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
1-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
2-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Acetone	ND	10		µg/L	1	7/15/2022 6:42:19 PM	R89550
Bromobenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Bromodichloromethane	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Bromoform	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Bromomethane	ND	3.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
2-Butanone	ND	10		µg/L	1	7/15/2022 6:42:19 PM	R89550
Carbon disulfide	ND	10		µg/L	1	7/15/2022 6:42:19 PM	R89550
Carbon Tetrachloride	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Chlorobenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Chloroethane	ND	2.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Chloroform	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Chloromethane	ND	3.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
2-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
4-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
cis-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Dibromochloromethane	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Dibromomethane	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,1-Dichloroethane	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,1-Dichloroethene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,2-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,3-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
2,2-Dichloropropane	ND	2.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,1-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Hexachlorobutadiene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
2-Hexanone	ND	10		µg/L	1	7/15/2022 6:42:19 PM	R89550
Isopropylbenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
4-Isopropyltoluene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
4-Methyl-2-pentanone	ND	10		µg/L	1	7/15/2022 6:42:19 PM	R89550
Methylene Chloride	ND	3.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
n-Butylbenzene	ND	3.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
n-Propylbenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 20 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-1R

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 9:40:00 AM

Lab ID: 2207654-004

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
sec-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Styrene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
tert-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
trans-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Trichlorofluoromethane	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Vinyl chloride	ND	1.0		µg/L	1	7/15/2022 6:42:19 PM	R89550
Xylenes, Total	ND	1.5		µg/L	1	7/15/2022 6:42:19 PM	R89550
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	1	7/15/2022 6:42:19 PM	R89550
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	7/15/2022 6:42:19 PM	R89550
Surr: Dibromofluoromethane	121	70-130		%Rec	1	7/15/2022 6:42:19 PM	R89550
Surr: Toluene-d8	102	70-130		%Rec	1	7/15/2022 6:42:19 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 21 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-5

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 10:25:00 AM

Lab ID: 2207654-005

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: bcv
Uranium	0.021	0.00050		mg/L	1	7/20/2022 3:29:19 PM	68844
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	450	50	*	mg/L	100	7/14/2022 7:57:58 PM	R89511
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	7/14/2022 7:45:05 PM	R89511
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	7/14/2022 7:45:05 PM	R89511
Sulfate	2200	50	*	mg/L	100	7/14/2022 7:57:58 PM	R89511
SM2320B: ALKALINITY							Analyst: CAS
Bicarbonate (As CaCO ₃)	717.6	20.00		mg/L Ca	1	7/19/2022 4:22:47 PM	R89632
Carbonate (As CaCO ₃)	ND	2.000		mg/L Ca	1	7/19/2022 4:22:47 PM	R89632
Total Alkalinity (as CaCO ₃)	717.6	20.00		mg/L Ca	1	7/19/2022 4:22:47 PM	R89632
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4170	40.0	*D	mg/L	1	7/22/2022 10:48:00 AM	68853
SM4500-H+B / 9040C: PH							Analyst: CAS
pH	7.47		H	pH units	1	7/19/2022 4:22:47 PM	R89632
EPA METHOD 7470A: MERCURY							Analyst: VP
Mercury	ND	0.00020		mg/L	1	7/19/2022 1:00:24 PM	68877
EPA METHOD 6010B: DISSOLVED METALS							Analyst: JRR
Arsenic	ND	0.020		mg/L	1	7/28/2022 11:09:22 AM	A89895
Barium	ND	0.020		mg/L	1	7/28/2022 11:09:22 AM	A89895
Cadmium	ND	0.0020		mg/L	1	7/28/2022 11:09:22 AM	A89895
Calcium	220	5.0		mg/L	5	7/28/2022 1:24:39 PM	A89895
Chromium	ND	0.0060		mg/L	1	7/28/2022 11:09:22 AM	A89895
Lead	ND	0.020		mg/L	1	7/28/2022 11:09:22 AM	A89895
Selenium	ND	0.050		mg/L	1	7/28/2022 11:09:22 AM	A89895
Silver	ND	0.0050		mg/L	1	7/28/2022 11:09:22 AM	A89895
Sodium	1200	50		mg/L	50	7/28/2022 1:27:50 PM	A89895
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Acenaphthylene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Aniline	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Anthracene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Azobenzene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Benz(a)anthracene	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
Benzo(a)pyrene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Benzo(b)fluoranthene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 22 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-5

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 10:25:00 AM

Lab ID: 2207654-005

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Benzo(k)fluoranthene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Benzoic acid	ND	20		µg/L	1	7/21/2022 7:20:08 PM	68843
Benzyl alcohol	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Bis(2-chloroethyl)ether	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
4-Bromophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Butyl benzyl phthalate	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Carbazole	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
4-Chloroaniline	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
2-Chloronaphthalene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
2-Chlorophenol	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Chrysene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Di-n-butyl phthalate	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Di-n-octyl phthalate	ND	20		µg/L	1	7/21/2022 7:20:08 PM	68843
Dibenz(a,h)anthracene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Dibenzofuran	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
1,2-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
1,3-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
1,4-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
3,3'-Dichlorobenzidine	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Diethyl phthalate	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Dimethyl phthalate	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
2,4-Dichlorophenol	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
2,4-Dimethylphenol	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
2,4-Dinitrophenol	ND	20		µg/L	1	7/21/2022 7:20:08 PM	68843
2,4-Dinitrotoluene	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
2,6-Dinitrotoluene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Fluoranthene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Fluorene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Hexachlorobenzene	ND	20		µg/L	1	7/21/2022 7:20:08 PM	68843
Hexachlorobutadiene	ND	20		µg/L	1	7/21/2022 7:20:08 PM	68843
Hexachlorocyclopentadiene	ND	20		µg/L	1	7/21/2022 7:20:08 PM	68843
Hexachloroethane	ND	20		µg/L	1	7/21/2022 7:20:08 PM	68843
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 23 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-5

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 10:25:00 AM

Lab ID: 2207654-005

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Isophorone	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
1-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
2-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
2-Methylphenol	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
3+4-Methylphenol	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
N-Nitrosodimethylamine	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
N-Nitrosodiphenylamine	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Naphthalene	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
2-Nitroaniline	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
3-Nitroaniline	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
4-Nitroaniline	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
Nitrobenzene	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
2-Nitrophenol	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
4-Nitrophenol	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Pentachlorophenol	ND	40		µg/L	1	7/21/2022 7:20:08 PM	68843
Phenanthrene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Phenol	ND	20		µg/L	1	7/21/2022 7:20:08 PM	68843
Pyrene	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Pyridine	ND	40		µg/L	1	7/21/2022 7:20:08 PM	68843
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	7/21/2022 7:20:08 PM	68843
2,4,5-Trichlorophenol	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
2,4,6-Trichlorophenol	ND	10		µg/L	1	7/21/2022 7:20:08 PM	68843
Surr: 2-Fluorophenol	45.9	29.4-87.7		%Rec	1	7/21/2022 7:20:08 PM	68843
Surr: Phenol-d5	45.0	28.5-64.7		%Rec	1	7/21/2022 7:20:08 PM	68843
Surr: 2,4,6-Tribromophenol	12.7	18.6-129	S	%Rec	1	7/21/2022 7:20:08 PM	68843
Surr: Nitrobenzene-d5	81.0	36.9-103		%Rec	1	7/21/2022 7:20:08 PM	68843
Surr: 2-Fluorobiphenyl	75.2	38.1-99.9		%Rec	1	7/21/2022 7:20:08 PM	68843
Surr: 4-Terphenyl-d14	106	48-155		%Rec	1	7/21/2022 7:20:08 PM	68843
EPA METHOD 8260B: VOLATILES							Analyst: JR
Benzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Toluene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Ethylbenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Naphthalene	ND	2.0		µg/L	1	7/15/2022 7:11:12 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 24 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-5

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 10:25:00 AM

Lab ID: 2207654-005

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
1-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
2-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Acetone	ND	10		µg/L	1	7/15/2022 7:11:12 PM	R89550
Bromobenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Bromodichloromethane	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Bromoform	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Bromomethane	ND	3.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
2-Butanone	ND	10		µg/L	1	7/15/2022 7:11:12 PM	R89550
Carbon disulfide	ND	10		µg/L	1	7/15/2022 7:11:12 PM	R89550
Carbon Tetrachloride	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Chlorobenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Chloroethane	ND	2.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Chloroform	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Chloromethane	ND	3.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
2-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
4-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
cis-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Dibromochloromethane	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Dibromomethane	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,1-Dichloroethane	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,1-Dichloroethene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,2-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,3-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
2,2-Dichloropropane	ND	2.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,1-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Hexachlorobutadiene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
2-Hexanone	ND	10		µg/L	1	7/15/2022 7:11:12 PM	R89550
Isopropylbenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
4-Isopropyltoluene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
4-Methyl-2-pentanone	ND	10		µg/L	1	7/15/2022 7:11:12 PM	R89550
Methylene Chloride	ND	3.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
n-Butylbenzene	ND	3.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
n-Propylbenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 25 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-5

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 10:25:00 AM

Lab ID: 2207654-005

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
sec-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Styrene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
tert-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
trans-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Trichlorofluoromethane	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Vinyl chloride	ND	1.0		µg/L	1	7/15/2022 7:11:12 PM	R89550
Xylenes, Total	ND	1.5		µg/L	1	7/15/2022 7:11:12 PM	R89550
Surr: 1,2-Dichloroethane-d4	115	70-130		%Rec	1	7/15/2022 7:11:12 PM	R89550
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	7/15/2022 7:11:12 PM	R89550
Surr: Dibromofluoromethane	121	70-130		%Rec	1	7/15/2022 7:11:12 PM	R89550
Surr: Toluene-d8	101	70-130		%Rec	1	7/15/2022 7:11:12 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 26 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-7

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 11:15:00 AM

Lab ID: 2207654-006

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: bcv
Uranium	0.026	0.0025		mg/L	5	7/21/2022 12:46:24 PM	68844
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	200	50		mg/L	100	7/14/2022 8:23:42 PM	R89511
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	7/14/2022 8:10:50 PM	R89511
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	7/14/2022 8:10:50 PM	R89511
Sulfate	1100	50	*	mg/L	100	7/14/2022 8:23:42 PM	R89511
SM2320B: ALKALINITY							Analyst: CAS
Bicarbonate (As CaCO ₃)	692.4	20.00		mg/L Ca	1	7/19/2022 4:50:17 PM	R89632
Carbonate (As CaCO ₃)	ND	2.000		mg/L Ca	1	7/19/2022 4:50:17 PM	R89632
Total Alkalinity (as CaCO ₃)	692.4	20.00		mg/L Ca	1	7/19/2022 4:50:17 PM	R89632
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2530	40.0	*D	mg/L	1	7/22/2022 10:48:00 AM	68853
SM4500-H+B / 9040C: PH							Analyst: CAS
pH	8.27		H	pH units	1	7/19/2022 4:50:17 PM	R89632
EPA METHOD 7470A: MERCURY							Analyst: VP
Mercury	ND	0.00020		mg/L	1	7/19/2022 1:02:34 PM	68877
EPA METHOD 6010B: DISSOLVED METALS							Analyst: JRR
Arsenic	ND	0.020		mg/L	1	7/28/2022 11:21:23 AM	A89895
Barium	0.021	0.020		mg/L	1	7/28/2022 11:21:23 AM	A89895
Cadmium	ND	0.0020		mg/L	1	7/28/2022 11:21:23 AM	A89895
Calcium	25	1.0		mg/L	1	7/28/2022 11:21:23 AM	A89895
Chromium	ND	0.0060		mg/L	1	7/28/2022 11:21:23 AM	A89895
Lead	ND	0.020		mg/L	1	7/28/2022 11:21:23 AM	A89895
Selenium	ND	0.050		mg/L	1	7/28/2022 2:25:06 PM	A89895
Silver	ND	0.0050		mg/L	1	7/28/2022 11:21:23 AM	A89895
Sodium	880	10		mg/L	10	7/28/2022 1:31:02 PM	A89895
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Acenaphthylene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Aniline	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Anthracene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Azobenzene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Benz(a)anthracene	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
Benzo(a)pyrene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Benzo(b)fluoranthene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 27 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-7

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 11:15:00 AM

Lab ID: 2207654-006

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Benzo(k)fluoranthene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Benzoic acid	ND	20		µg/L	1	7/21/2022 8:03:35 PM	68843
Benzyl alcohol	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Bis(2-chloroethyl)ether	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
4-Bromophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Butyl benzyl phthalate	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Carbazole	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
4-Chloroaniline	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
2-Chloronaphthalene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
2-Chlorophenol	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Chrysene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Di-n-butyl phthalate	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Di-n-octyl phthalate	ND	20		µg/L	1	7/21/2022 8:03:35 PM	68843
Dibenz(a,h)anthracene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Dibenzofuran	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
1,2-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
1,3-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
1,4-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
3,3'-Dichlorobenzidine	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Diethyl phthalate	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Dimethyl phthalate	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
2,4-Dichlorophenol	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
2,4-Dimethylphenol	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
2,4-Dinitrophenol	ND	20		µg/L	1	7/21/2022 8:03:35 PM	68843
2,4-Dinitrotoluene	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
2,6-Dinitrotoluene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Fluoranthene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Fluorene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Hexachlorobenzene	ND	20		µg/L	1	7/21/2022 8:03:35 PM	68843
Hexachlorobutadiene	ND	20		µg/L	1	7/21/2022 8:03:35 PM	68843
Hexachlorocyclopentadiene	ND	20		µg/L	1	7/21/2022 8:03:35 PM	68843
Hexachloroethane	ND	20		µg/L	1	7/21/2022 8:03:35 PM	68843
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 28 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-7

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 11:15:00 AM

Lab ID: 2207654-006

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Isophorone	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
1-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
2-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
2-Methylphenol	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
3+4-Methylphenol	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
N-Nitrosodimethylamine	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
N-Nitrosodiphenylamine	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Naphthalene	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
2-Nitroaniline	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
3-Nitroaniline	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
4-Nitroaniline	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
Nitrobenzene	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
2-Nitrophenol	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
4-Nitrophenol	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Pentachlorophenol	ND	40		µg/L	1	7/21/2022 8:03:35 PM	68843
Phenanthrene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Phenol	ND	20		µg/L	1	7/21/2022 8:03:35 PM	68843
Pyrene	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Pyridine	ND	40		µg/L	1	7/21/2022 8:03:35 PM	68843
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	7/21/2022 8:03:35 PM	68843
2,4,5-Trichlorophenol	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
2,4,6-Trichlorophenol	ND	10		µg/L	1	7/21/2022 8:03:35 PM	68843
Surr: 2-Fluorophenol	59.5	29.4-87.7		%Rec	1	7/21/2022 8:03:35 PM	68843
Surr: Phenol-d5	45.5	28.5-64.7		%Rec	1	7/21/2022 8:03:35 PM	68843
Surr: 2,4,6-Tribromophenol	64.4	18.6-129		%Rec	1	7/21/2022 8:03:35 PM	68843
Surr: Nitrobenzene-d5	77.4	36.9-103		%Rec	1	7/21/2022 8:03:35 PM	68843
Surr: 2-Fluorobiphenyl	70.0	38.1-99.9		%Rec	1	7/21/2022 8:03:35 PM	68843
Surr: 4-Terphenyl-d14	101	48-155		%Rec	1	7/21/2022 8:03:35 PM	68843
EPA METHOD 8260B: VOLATILES							Analyst: JR
Benzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Toluene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Ethylbenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Naphthalene	ND	2.0		µg/L	1	7/15/2022 7:40:01 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 29 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-7

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 11:15:00 AM

Lab ID: 2207654-006

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
1-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
2-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Acetone	ND	10		µg/L	1	7/15/2022 7:40:01 PM	R89550
Bromobenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Bromodichloromethane	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Bromoform	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Bromomethane	ND	3.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
2-Butanone	ND	10		µg/L	1	7/15/2022 7:40:01 PM	R89550
Carbon disulfide	ND	10		µg/L	1	7/15/2022 7:40:01 PM	R89550
Carbon Tetrachloride	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Chlorobenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Chloroethane	ND	2.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Chloroform	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Chloromethane	ND	3.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
2-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
4-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
cis-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Dibromochloromethane	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Dibromomethane	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,1-Dichloroethane	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,1-Dichloroethene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,2-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,3-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
2,2-Dichloropropane	ND	2.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,1-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Hexachlorobutadiene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
2-Hexanone	ND	10		µg/L	1	7/15/2022 7:40:01 PM	R89550
Isopropylbenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
4-Isopropyltoluene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
4-Methyl-2-pentanone	ND	10		µg/L	1	7/15/2022 7:40:01 PM	R89550
Methylene Chloride	ND	3.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
n-Butylbenzene	ND	3.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
n-Propylbenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 30 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-7

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 11:15:00 AM

Lab ID: 2207654-006

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
sec-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Styrene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
tert-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
trans-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Trichlorofluoromethane	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Vinyl chloride	ND	1.0		µg/L	1	7/15/2022 7:40:01 PM	R89550
Xylenes, Total	ND	1.5		µg/L	1	7/15/2022 7:40:01 PM	R89550
Surr: 1,2-Dichloroethane-d4	113	70-130		%Rec	1	7/15/2022 7:40:01 PM	R89550
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	7/15/2022 7:40:01 PM	R89550
Surr: Dibromofluoromethane	120	70-130		%Rec	1	7/15/2022 7:40:01 PM	R89550
Surr: Toluene-d8	102	70-130		%Rec	1	7/15/2022 7:40:01 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 31 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-9

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 11:50:00 AM

Lab ID: 2207654-007

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: bcv
Uranium	0.0048	0.00050		mg/L	1	7/20/2022 3:34:12 PM	68844
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	380	50	*	mg/L	100	7/14/2022 8:49:25 PM	R89511
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	7/14/2022 8:36:33 PM	R89511
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	7/14/2022 8:36:33 PM	R89511
Sulfate	19	5.0		mg/L	10	7/14/2022 8:36:33 PM	R89511
SM2320B: ALKALINITY							Analyst: CAS
Bicarbonate (As CaCO ₃)	1376	50.00	H	mg/L Ca	2.5	7/28/2022 2:22:11 PM	R89866
Carbonate (As CaCO ₃)	ND	5.000	H	mg/L Ca	2.5	7/28/2022 2:22:11 PM	R89866
Total Alkalinity (as CaCO ₃)	1376	50.00	H	mg/L Ca	2.5	7/28/2022 2:22:11 PM	R89866
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2420	200	*D	mg/L	1	7/22/2022 10:48:00 AM	68853
SM4500-H+B / 9040C: PH							Analyst: CAS
pH	8.09		H	pH units	1	7/19/2022 5:15:21 PM	R89632
EPA METHOD 7470A: MERCURY							Analyst: VP
Mercury	ND	0.00020		mg/L	1	7/19/2022 1:04:44 PM	68877
EPA METHOD 6010B: DISSOLVED METALS							Analyst: JRR
Arsenic	0.027	0.020		mg/L	1	7/28/2022 11:24:37 AM	A89895
Barium	0.87	0.020		mg/L	1	7/28/2022 11:24:37 AM	A89895
Cadmium	ND	0.0020		mg/L	1	7/28/2022 11:24:37 AM	A89895
Calcium	20	1.0		mg/L	1	7/28/2022 11:24:37 AM	A89895
Chromium	ND	0.0060		mg/L	1	7/28/2022 11:24:37 AM	A89895
Lead	ND	0.020		mg/L	1	7/28/2022 11:24:37 AM	A89895
Selenium	0.056	0.050		mg/L	1	7/28/2022 3:11:26 PM	A89895
Silver	ND	0.0050		mg/L	1	7/28/2022 11:24:37 AM	A89895
Sodium	900	10		mg/L	10	7/28/2022 1:34:04 PM	A89895
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Acenaphthylene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Aniline	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Anthracene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Azobenzene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Benz(a)anthracene	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
Benzo(a)pyrene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Benzo(b)fluoranthene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 32 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-9

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 11:50:00 AM

Lab ID: 2207654-007

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Benzo(k)fluoranthene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Benzoic acid	ND	20		µg/L	1	7/21/2022 8:47:15 PM	68843
Benzyl alcohol	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Bis(2-chloroethyl)ether	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
4-Bromophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Butyl benzyl phthalate	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Carbazole	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
4-Chloroaniline	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
2-Chloronaphthalene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
2-Chlorophenol	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Chrysene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Di-n-butyl phthalate	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Di-n-octyl phthalate	ND	20		µg/L	1	7/21/2022 8:47:15 PM	68843
Dibenz(a,h)anthracene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Dibenzofuran	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
1,2-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
1,3-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
1,4-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
3,3'-Dichlorobenzidine	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Diethyl phthalate	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Dimethyl phthalate	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
2,4-Dichlorophenol	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
2,4-Dimethylphenol	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
2,4-Dinitrophenol	ND	20		µg/L	1	7/21/2022 8:47:15 PM	68843
2,4-Dinitrotoluene	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
2,6-Dinitrotoluene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Fluoranthene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Fluorene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Hexachlorobenzene	ND	20		µg/L	1	7/21/2022 8:47:15 PM	68843
Hexachlorobutadiene	ND	20		µg/L	1	7/21/2022 8:47:15 PM	68843
Hexachlorocyclopentadiene	ND	20		µg/L	1	7/21/2022 8:47:15 PM	68843
Hexachloroethane	ND	20		µg/L	1	7/21/2022 8:47:15 PM	68843
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 33 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-9

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 11:50:00 AM

Lab ID: 2207654-007

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Isophorone	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
1-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
2-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
2-Methylphenol	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
3+4-Methylphenol	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
N-Nitrosodimethylamine	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
N-Nitrosodiphenylamine	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Naphthalene	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
2-Nitroaniline	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
3-Nitroaniline	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
4-Nitroaniline	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
Nitrobenzene	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
2-Nitrophenol	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
4-Nitrophenol	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Pentachlorophenol	ND	40		µg/L	1	7/21/2022 8:47:15 PM	68843
Phenanthrene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Phenol	190	20		µg/L	1	7/21/2022 8:47:15 PM	68843
Pyrene	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Pyridine	ND	40		µg/L	1	7/21/2022 8:47:15 PM	68843
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	7/21/2022 8:47:15 PM	68843
2,4,5-Trichlorophenol	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
2,4,6-Trichlorophenol	ND	10		µg/L	1	7/21/2022 8:47:15 PM	68843
Surr: 2-Fluorophenol	59.7	29.4-87.7		%Rec	1	7/21/2022 8:47:15 PM	68843
Surr: Phenol-d5	47.6	28.5-64.7		%Rec	1	7/21/2022 8:47:15 PM	68843
Surr: 2,4,6-Tribromophenol	71.4	18.6-129		%Rec	1	7/21/2022 8:47:15 PM	68843
Surr: Nitrobenzene-d5	78.4	36.9-103		%Rec	1	7/21/2022 8:47:15 PM	68843
Surr: 2-Fluorobiphenyl	71.6	38.1-99.9		%Rec	1	7/21/2022 8:47:15 PM	68843
Surr: 4-Terphenyl-d14	98.7	48-155		%Rec	1	7/21/2022 8:47:15 PM	68843
EPA METHOD 8260B: VOLATILES							Analyst: JR
Benzene	5200	500		µg/L	500	7/15/2022 8:08:53 PM	R89550
Toluene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Ethylbenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Methyl tert-butyl ether (MTBE)	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,2,4-Trimethylbenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,3,5-Trimethylbenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,2-Dichloroethane (EDC)	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,2-Dibromoethane (EDB)	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Naphthalene	ND	100		µg/L	50	7/15/2022 8:37:39 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 34 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-9

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 11:50:00 AM

Lab ID: 2207654-007

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
1-Methylnaphthalene	ND	200		µg/L	50	7/15/2022 8:37:39 PM	R89550
2-Methylnaphthalene	ND	200		µg/L	50	7/15/2022 8:37:39 PM	R89550
Acetone	ND	500		µg/L	50	7/15/2022 8:37:39 PM	R89550
Bromobenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Bromodichloromethane	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Bromoform	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Bromomethane	ND	150		µg/L	50	7/15/2022 8:37:39 PM	R89550
2-Butanone	ND	500		µg/L	50	7/15/2022 8:37:39 PM	R89550
Carbon disulfide	ND	500		µg/L	50	7/15/2022 8:37:39 PM	R89550
Carbon Tetrachloride	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Chlorobenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Chloroethane	ND	100		µg/L	50	7/15/2022 8:37:39 PM	R89550
Chloroform	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Chloromethane	ND	150		µg/L	50	7/15/2022 8:37:39 PM	R89550
2-Chlorotoluene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
4-Chlorotoluene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
cis-1,2-DCE	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
cis-1,3-Dichloropropene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,2-Dibromo-3-chloropropane	ND	100		µg/L	50	7/15/2022 8:37:39 PM	R89550
Dibromochloromethane	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Dibromomethane	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,2-Dichlorobenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,3-Dichlorobenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,4-Dichlorobenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Dichlorodifluoromethane	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,1-Dichloroethane	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,1-Dichloroethene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,2-Dichloropropane	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,3-Dichloropropane	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
2,2-Dichloropropane	ND	100		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,1-Dichloropropene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Hexachlorobutadiene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
2-Hexanone	ND	500		µg/L	50	7/15/2022 8:37:39 PM	R89550
Isopropylbenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
4-Isopropyltoluene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
4-Methyl-2-pentanone	ND	500		µg/L	50	7/15/2022 8:37:39 PM	R89550
Methylene Chloride	ND	150		µg/L	50	7/15/2022 8:37:39 PM	R89550
n-Butylbenzene	ND	150		µg/L	50	7/15/2022 8:37:39 PM	R89550
n-Propylbenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 35 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-9

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 11:50:00 AM

Lab ID: 2207654-007

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
sec-Butylbenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Styrene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
tert-Butylbenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,1,1,2-Tetrachloroethane	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,1,2,2-Tetrachloroethane	ND	100		µg/L	50	7/15/2022 8:37:39 PM	R89550
Tetrachloroethene (PCE)	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
trans-1,2-DCE	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
trans-1,3-Dichloropropene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,2,3-Trichlorobenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,2,4-Trichlorobenzene	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,1,1-Trichloroethane	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,1,2-Trichloroethane	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Trichloroethene (TCE)	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Trichlorofluoromethane	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
1,2,3-Trichloropropane	ND	100		µg/L	50	7/15/2022 8:37:39 PM	R89550
Vinyl chloride	ND	50		µg/L	50	7/15/2022 8:37:39 PM	R89550
Xylenes, Total	ND	75		µg/L	50	7/15/2022 8:37:39 PM	R89550
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	50	7/15/2022 8:37:39 PM	R89550
Surr: 4-Bromofluorobenzene	111	70-130		%Rec	50	7/15/2022 8:37:39 PM	R89550
Surr: Dibromofluoromethane	113	70-130		%Rec	50	7/15/2022 8:37:39 PM	R89550
Surr: Toluene-d8	102	70-130		%Rec	50	7/15/2022 8:37:39 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 36 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-4

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 1:45:00 PM

Lab ID: 2207654-008

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: bcv
Uranium	0.00096	0.00050		mg/L	1	7/20/2022 3:36:39 PM	68844
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	190	5.0		mg/L	10	7/14/2022 9:02:18 PM	R89511
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	7/14/2022 9:02:18 PM	R89511
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	7/14/2022 9:02:18 PM	R89511
Sulfate	370	5.0	*	mg/L	10	7/14/2022 9:02:18 PM	R89511
SM2320B: ALKALINITY							Analyst: CAS
Bicarbonate (As CaCO ₃)	750.6	20.00		mg/L Ca	1	7/19/2022 5:47:23 PM	R89632
Carbonate (As CaCO ₃)	ND	2.000		mg/L Ca	1	7/19/2022 5:47:23 PM	R89632
Total Alkalinity (as CaCO ₃)	750.6	20.00		mg/L Ca	1	7/19/2022 5:47:23 PM	R89632
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1560	40.0	*D	mg/L	1	7/22/2022 10:48:00 AM	68853
SM4500-H+B / 9040C: PH							Analyst: CAS
pH	8.02		H	pH units	1	7/19/2022 5:47:23 PM	R89632
EPA METHOD 7470A: MERCURY							Analyst: VP
Mercury	ND	0.00020		mg/L	1	7/19/2022 1:06:52 PM	68877
EPA METHOD 6010B: DISSOLVED METALS							Analyst: JRR
Arsenic	ND	0.020		mg/L	1	7/28/2022 11:27:50 AM	A89895
Barium	0.054	0.020		mg/L	1	7/28/2022 11:27:50 AM	A89895
Cadmium	ND	0.0020		mg/L	1	7/28/2022 11:27:50 AM	A89895
Calcium	19	1.0		mg/L	1	7/28/2022 11:27:50 AM	A89895
Chromium	ND	0.0060		mg/L	1	7/28/2022 11:27:50 AM	A89895
Lead	ND	0.020		mg/L	1	7/28/2022 11:27:50 AM	A89895
Selenium	ND	0.050		mg/L	1	7/28/2022 3:14:31 PM	A89895
Silver	ND	0.0050		mg/L	1	7/28/2022 11:27:50 AM	A89895
Sodium	580	10		mg/L	10	7/28/2022 1:37:02 PM	A89895
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Acenaphthylene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Aniline	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Anthracene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Azobenzene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Benz(a)anthracene	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
Benzo(a)pyrene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Benzo(b)fluoranthene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 37 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-4

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 1:45:00 PM

Lab ID: 2207654-008

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Benzo(k)fluoranthene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Benzoic acid	ND	20		µg/L	1	7/21/2022 9:30:38 PM	68843
Benzyl alcohol	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Bis(2-chloroethyl)ether	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
4-Bromophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Butyl benzyl phthalate	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Carbazole	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
4-Chloroaniline	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
2-Chloronaphthalene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
2-Chlorophenol	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Chrysene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Di-n-butyl phthalate	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Di-n-octyl phthalate	ND	20		µg/L	1	7/21/2022 9:30:38 PM	68843
Dibenz(a,h)anthracene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Dibenzofuran	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
1,2-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
1,3-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
1,4-Dichlorobenzene	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
3,3'-Dichlorobenzidine	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Diethyl phthalate	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Dimethyl phthalate	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
2,4-Dichlorophenol	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
2,4-Dimethylphenol	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
2,4-Dinitrophenol	ND	20		µg/L	1	7/21/2022 9:30:38 PM	68843
2,4-Dinitrotoluene	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
2,6-Dinitrotoluene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Fluoranthene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Fluorene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Hexachlorobenzene	ND	20		µg/L	1	7/21/2022 9:30:38 PM	68843
Hexachlorobutadiene	ND	20		µg/L	1	7/21/2022 9:30:38 PM	68843
Hexachlorocyclopentadiene	ND	20		µg/L	1	7/21/2022 9:30:38 PM	68843
Hexachloroethane	ND	20		µg/L	1	7/21/2022 9:30:38 PM	68843
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 38 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-4

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 1:45:00 PM

Lab ID: 2207654-008

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Isophorone	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
1-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
2-Methylnaphthalene	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
2-Methylphenol	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
3+4-Methylphenol	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
N-Nitrosodimethylamine	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
N-Nitrosodiphenylamine	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Naphthalene	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
2-Nitroaniline	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
3-Nitroaniline	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
4-Nitroaniline	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
Nitrobenzene	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
2-Nitrophenol	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
4-Nitrophenol	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Pentachlorophenol	ND	40		µg/L	1	7/21/2022 9:30:38 PM	68843
Phenanthrene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Phenol	ND	20		µg/L	1	7/21/2022 9:30:38 PM	68843
Pyrene	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Pyridine	ND	40		µg/L	1	7/21/2022 9:30:38 PM	68843
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	7/21/2022 9:30:38 PM	68843
2,4,5-Trichlorophenol	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
2,4,6-Trichlorophenol	ND	10		µg/L	1	7/21/2022 9:30:38 PM	68843
Surr: 2-Fluorophenol	62.2	29.4-87.7		%Rec	1	7/21/2022 9:30:38 PM	68843
Surr: Phenol-d5	47.1	28.5-64.7		%Rec	1	7/21/2022 9:30:38 PM	68843
Surr: 2,4,6-Tribromophenol	66.3	18.6-129		%Rec	1	7/21/2022 9:30:38 PM	68843
Surr: Nitrobenzene-d5	75.7	36.9-103		%Rec	1	7/21/2022 9:30:38 PM	68843
Surr: 2-Fluorobiphenyl	71.9	38.1-99.9		%Rec	1	7/21/2022 9:30:38 PM	68843
Surr: 4-Terphenyl-d14	103	48-155		%Rec	1	7/21/2022 9:30:38 PM	68843
EPA METHOD 8260B: VOLATILES							Analyst: JR
Benzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Toluene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Ethylbenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Naphthalene	ND	2.0		µg/L	1	7/15/2022 9:06:25 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 39 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-4

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 1:45:00 PM

Lab ID: 2207654-008

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
1-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
2-Methylnaphthalene	ND	4.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Acetone	ND	10		µg/L	1	7/15/2022 9:06:25 PM	R89550
Bromobenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Bromodichloromethane	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Bromoform	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Bromomethane	ND	3.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
2-Butanone	ND	10		µg/L	1	7/15/2022 9:06:25 PM	R89550
Carbon disulfide	ND	10		µg/L	1	7/15/2022 9:06:25 PM	R89550
Carbon Tetrachloride	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Chlorobenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Chloroethane	ND	2.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Chloroform	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Chloromethane	ND	3.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
2-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
4-Chlorotoluene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
cis-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Dibromochloromethane	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Dibromomethane	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,1-Dichloroethane	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,1-Dichloroethene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,2-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,3-Dichloropropane	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
2,2-Dichloropropane	ND	2.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,1-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Hexachlorobutadiene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
2-Hexanone	ND	10		µg/L	1	7/15/2022 9:06:25 PM	R89550
Isopropylbenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
4-Isopropyltoluene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
4-Methyl-2-pentanone	ND	10		µg/L	1	7/15/2022 9:06:25 PM	R89550
Methylene Chloride	ND	3.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
n-Butylbenzene	ND	3.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
n-Propylbenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 40 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-4

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 1:45:00 PM

Lab ID: 2207654-008

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
sec-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Styrene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
tert-Butylbenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
trans-1,2-DCE	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Trichlorofluoromethane	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Vinyl chloride	ND	1.0		µg/L	1	7/15/2022 9:06:25 PM	R89550
Xylenes, Total	ND	1.5		µg/L	1	7/15/2022 9:06:25 PM	R89550
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	1	7/15/2022 9:06:25 PM	R89550
Surr: 4-Bromofluorobenzene	119	70-130		%Rec	1	7/15/2022 9:06:25 PM	R89550
Surr: Dibromofluoromethane	119	70-130		%Rec	1	7/15/2022 9:06:25 PM	R89550
Surr: Toluene-d8	104	70-130		%Rec	1	7/15/2022 9:06:25 PM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 41 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-2

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 2:20:00 PM

Lab ID: 2207654-009

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: bcv
Uranium	ND	0.00050		mg/L	1	7/20/2022 3:39:05 PM	68844
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	1100	50	*	mg/L	100	7/14/2022 10:06:46 PM	R89511
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	7/14/2022 9:53:53 PM	R89511
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	7/14/2022 9:53:53 PM	R89511
Sulfate	ND	5.0		mg/L	10	7/14/2022 9:53:53 PM	R89511
SM2320B: ALKALINITY							Analyst: CAS
Bicarbonate (As CaCO ₃)	2098	50.00		mg/L Ca	2.5	7/20/2022 7:25:56 PM	R89743
Carbonate (As CaCO ₃)	ND	5.000		mg/L Ca	2.5	7/20/2022 7:25:56 PM	R89743
Total Alkalinity (as CaCO ₃)	2098	50.00		mg/L Ca	2.5	7/20/2022 7:25:56 PM	R89743
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3860	100	*D	mg/L	1	7/22/2022 10:48:00 AM	68853
SM4500-H+B / 9040C: PH							Analyst: CAS
pH	7.91		H	pH units	1	7/19/2022 6:14:04 PM	R89632
EPA METHOD 7470A: MERCURY							Analyst: VP
Mercury	ND	0.00020		mg/L	1	7/19/2022 1:08:59 PM	68877
EPA METHOD 6010B: DISSOLVED METALS							Analyst: JRR
Arsenic	0.021	0.020		mg/L	1	7/28/2022 11:30:53 AM	A89895
Barium	0.60	0.020		mg/L	1	7/28/2022 11:30:53 AM	A89895
Cadmium	ND	0.0020		mg/L	1	7/28/2022 11:30:53 AM	A89895
Calcium	41	1.0		mg/L	1	7/28/2022 11:30:53 AM	A89895
Calcium	43	10		mg/L	10	7/28/2022 1:40:13 PM	A89895
Chromium	ND	0.0060		mg/L	1	7/28/2022 11:30:53 AM	A89895
Lead	ND	0.020		mg/L	1	7/28/2022 11:30:53 AM	A89895
Selenium	0.074	0.050		mg/L	1	7/28/2022 3:01:48 PM	A89895
Silver	ND	0.0050		mg/L	1	7/28/2022 11:30:53 AM	A89895
Sodium	1500	100		mg/L	100	7/29/2022 2:42:58 PM	A89913
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Acenaphthylene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Aniline	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Anthracene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Azobenzene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Benz(a)anthracene	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
Benzo(a)pyrene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Benzo(b)fluoranthene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 42 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-2

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 2:20:00 PM

Lab ID: 2207654-009

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
Benzo(k)fluoranthene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Benzoic acid	ND	20		µg/L	1	7/22/2022 2:05:11 PM	68843
Benzyl alcohol	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Bis(2-chloroethyl)ether	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
4-Bromophenyl phenyl ether	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Butyl benzyl phthalate	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Carbazole	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
4-Chloroaniline	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
2-Chloronaphthalene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
2-Chlorophenol	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Chrysene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Di-n-butyl phthalate	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Di-n-octyl phthalate	ND	20		µg/L	1	7/22/2022 2:05:11 PM	68843
Dibenz(a,h)anthracene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Dibenzofuran	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
1,2-Dichlorobenzene	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
1,3-Dichlorobenzene	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
1,4-Dichlorobenzene	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
3,3'-Dichlorobenzidine	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Diethyl phthalate	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Dimethyl phthalate	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
2,4-Dichlorophenol	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
2,4-Dimethylphenol	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
2,4-Dinitrophenol	ND	20		µg/L	1	7/22/2022 2:05:11 PM	68843
2,4-Dinitrotoluene	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
2,6-Dinitrotoluene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Fluoranthene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Fluorene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Hexachlorobenzene	ND	20		µg/L	1	7/22/2022 2:05:11 PM	68843
Hexachlorobutadiene	ND	20		µg/L	1	7/22/2022 2:05:11 PM	68843
Hexachlorocyclopentadiene	ND	20		µg/L	1	7/22/2022 2:05:11 PM	68843
Hexachloroethane	ND	20		µg/L	1	7/22/2022 2:05:11 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 43 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-2

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 2:20:00 PM

Lab ID: 2207654-009

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Isophorone	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
1-Methylnaphthalene	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
2-Methylnaphthalene	5.8	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
2-Methylphenol	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
3+4-Methylphenol	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
N-Nitrosodimethylamine	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
N-Nitrosodiphenylamine	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Naphthalene	11	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
2-Nitroaniline	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
3-Nitroaniline	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
4-Nitroaniline	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
Nitrobenzene	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
2-Nitrophenol	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
4-Nitrophenol	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Pentachlorophenol	ND	40		µg/L	1	7/22/2022 2:05:11 PM	68843
Phenanthrene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Phenol	ND	20		µg/L	1	7/22/2022 2:05:11 PM	68843
Pyrene	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Pyridine	ND	40		µg/L	1	7/22/2022 2:05:11 PM	68843
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	7/22/2022 2:05:11 PM	68843
2,4,5-Trichlorophenol	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
2,4,6-Trichlorophenol	ND	10		µg/L	1	7/22/2022 2:05:11 PM	68843
Surr: 2-Fluorophenol	29.5	15-84.5		%Rec	1	7/22/2022 2:05:11 PM	68843
Surr: Phenol-d5	25.7	15-67		%Rec	1	7/22/2022 2:05:11 PM	68843
Surr: 2,4,6-Tribromophenol	20.3	15-108		%Rec	1	7/22/2022 2:05:11 PM	68843
Surr: Nitrobenzene-d5	42.8	16.8-112		%Rec	1	7/22/2022 2:05:11 PM	68843
Surr: 2-Fluorobiphenyl	41.7	15-101		%Rec	1	7/22/2022 2:05:11 PM	68843
Surr: 4-Terphenyl-d14	58.7	34.4-134		%Rec	1	7/22/2022 2:05:11 PM	68843
EPA METHOD 8260B: VOLATILES							Analyst: JR
Benzene	23000	500		µg/L	500	7/16/2022 12:27:18 AM	R89550
Toluene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Ethylbenzene	96	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Methyl tert-butyl ether (MTBE)	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,2,4-Trimethylbenzene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,3,5-Trimethylbenzene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,2-Dichloroethane (EDC)	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,2-Dibromoethane (EDB)	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 44 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-2

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 2:20:00 PM

Lab ID: 2207654-009

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
Naphthalene	ND	100		µg/L	50	7/16/2022 12:55:55 AM	R89550
1-Methylnaphthalene	ND	200		µg/L	50	7/16/2022 12:55:55 AM	R89550
2-Methylnaphthalene	ND	200		µg/L	50	7/16/2022 12:55:55 AM	R89550
Acetone	ND	500		µg/L	50	7/16/2022 12:55:55 AM	R89550
Bromobenzene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Bromodichloromethane	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Bromoform	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Bromomethane	ND	150		µg/L	50	7/16/2022 12:55:55 AM	R89550
2-Butanone	ND	500		µg/L	50	7/16/2022 12:55:55 AM	R89550
Carbon disulfide	ND	500		µg/L	50	7/16/2022 12:55:55 AM	R89550
Carbon Tetrachloride	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Chlorobenzene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Chloroethane	ND	100		µg/L	50	7/16/2022 12:55:55 AM	R89550
Chloroform	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Chloromethane	ND	150		µg/L	50	7/16/2022 12:55:55 AM	R89550
2-Chlorotoluene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
4-Chlorotoluene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
cis-1,2-DCE	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
cis-1,3-Dichloropropene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,2-Dibromo-3-chloropropane	ND	100		µg/L	50	7/16/2022 12:55:55 AM	R89550
Dibromochloromethane	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Dibromomethane	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,2-Dichlorobenzene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,3-Dichlorobenzene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,4-Dichlorobenzene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Dichlorodifluoromethane	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,1-Dichloroethane	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,1-Dichloroethene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,2-Dichloropropane	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,3-Dichloropropane	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
2,2-Dichloropropane	ND	100		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,1-Dichloropropene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Hexachlorobutadiene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
2-Hexanone	ND	500		µg/L	50	7/16/2022 12:55:55 AM	R89550
Isopropylbenzene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
4-Isopropyltoluene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
4-Methyl-2-pentanone	ND	500		µg/L	50	7/16/2022 12:55:55 AM	R89550
Methylene Chloride	ND	150		µg/L	50	7/16/2022 12:55:55 AM	R89550
n-Butylbenzene	ND	150		µg/L	50	7/16/2022 12:55:55 AM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 45 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: WMW-2

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 2:20:00 PM

Lab ID: 2207654-009

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
n-Propylbenzene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
sec-Butylbenzene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Styrene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
tert-Butylbenzene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,1,1,2-Tetrachloroethane	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,1,2,2-Tetrachloroethane	ND	100		µg/L	50	7/16/2022 12:55:55 AM	R89550
Tetrachloroethene (PCE)	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
trans-1,2-DCE	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
trans-1,3-Dichloropropene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,2,3-Trichlorobenzene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,2,4-Trichlorobenzene	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,1,1-Trichloroethane	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,1,2-Trichloroethane	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Trichloroethene (TCE)	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Trichlorofluoromethane	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
1,2,3-Trichloropropane	ND	100		µg/L	50	7/16/2022 12:55:55 AM	R89550
Vinyl chloride	ND	50		µg/L	50	7/16/2022 12:55:55 AM	R89550
Xylenes, Total	130	75		µg/L	50	7/16/2022 12:55:55 AM	R89550
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	50	7/16/2022 12:55:55 AM	R89550
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	50	7/16/2022 12:55:55 AM	R89550
Surr: Dibromofluoromethane	104	70-130		%Rec	50	7/16/2022 12:55:55 AM	R89550
Surr: Toluene-d8	104	70-130		%Rec	50	7/16/2022 12:55:55 AM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 46 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: DUP 7/13/2022

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022

Lab ID: 2207654-010

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: bcv
Uranium	0.018	0.00050		mg/L	1	7/19/2022 11:52:15 AM	B89608
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	450	50	*	mg/L	100	7/14/2022 10:32:30 PM	R89511
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	7/14/2022 10:19:38 PM	R89511
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	7/14/2022 10:19:38 PM	R89511
Sulfate	2200	50	*	mg/L	100	7/14/2022 10:32:30 PM	R89511
SM2320B: ALKALINITY							Analyst: CAS
Bicarbonate (As CaCO ₃)	730.8	20.00		mg/L Ca	1	7/19/2022 6:39:19 PM	R89632
Carbonate (As CaCO ₃)	ND	2.000		mg/L Ca	1	7/19/2022 6:39:19 PM	R89632
Total Alkalinity (as CaCO ₃)	730.8	20.00		mg/L Ca	1	7/19/2022 6:39:19 PM	R89632
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4250	20.0	*	mg/L	1	7/22/2022 10:48:00 AM	68853
SM4500-H+B / 9040C: PH							Analyst: CAS
pH	7.73		H	pH units	1	7/19/2022 6:39:19 PM	R89632
EPA METHOD 7470A: MERCURY							Analyst: VP
Mercury	ND	0.00020		mg/L	1	7/19/2022 1:11:07 PM	68877
EPA METHOD 6010B: DISSOLVED METALS							Analyst: JRR
Arsenic	ND	0.020		mg/L	1	7/28/2022 11:34:17 AM	A89895
Barium	ND	0.020		mg/L	1	7/28/2022 11:34:17 AM	A89895
Cadmium	ND	0.0020		mg/L	1	7/28/2022 11:34:17 AM	A89895
Calcium	220	5.0		mg/L	5	7/28/2022 1:43:18 PM	A89895
Chromium	ND	0.0060		mg/L	1	7/28/2022 11:34:17 AM	A89895
Lead	ND	0.020		mg/L	1	7/28/2022 11:34:17 AM	A89895
Selenium	ND	0.050		mg/L	1	7/28/2022 3:05:13 PM	A89895
Silver	ND	0.0050		mg/L	1	7/28/2022 11:34:17 AM	A89895
Sodium	1200	50		mg/L	50	7/28/2022 2:01:23 PM	A89895
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Acenaphthylene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Aniline	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Anthracene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Azobenzene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Benz(a)anthracene	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
Benzo(a)pyrene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Benzo(b)fluoranthene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 47 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: DUP 7/13/2022

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022

Lab ID: 2207654-010

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Benzo(k)fluoranthene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Benzoic acid	ND	20		µg/L	1	7/22/2022 2:47:52 PM	68843
Benzyl alcohol	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Bis(2-chloroethyl)ether	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
4-Bromophenyl phenyl ether	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Butyl benzyl phthalate	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Carbazole	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
4-Chloroaniline	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
2-Chloronaphthalene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
2-Chlorophenol	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Chrysene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Di-n-butyl phthalate	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Di-n-octyl phthalate	ND	20		µg/L	1	7/22/2022 2:47:52 PM	68843
Dibenz(a,h)anthracene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Dibenzofuran	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
1,2-Dichlorobenzene	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
1,3-Dichlorobenzene	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
1,4-Dichlorobenzene	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
3,3'-Dichlorobenzidine	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Diethyl phthalate	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Dimethyl phthalate	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
2,4-Dichlorophenol	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
2,4-Dimethylphenol	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
2,4-Dinitrophenol	ND	20		µg/L	1	7/22/2022 2:47:52 PM	68843
2,4-Dinitrotoluene	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
2,6-Dinitrotoluene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Fluoranthene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Fluorene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Hexachlorobenzene	ND	20		µg/L	1	7/22/2022 2:47:52 PM	68843
Hexachlorobutadiene	ND	20		µg/L	1	7/22/2022 2:47:52 PM	68843
Hexachlorocyclopentadiene	ND	20		µg/L	1	7/22/2022 2:47:52 PM	68843
Hexachloroethane	ND	20		µg/L	1	7/22/2022 2:47:52 PM	68843
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 48 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: DUP 7/13/2022

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022

Lab ID: 2207654-010

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Isophorone	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
1-Methylnaphthalene	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
2-Methylnaphthalene	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
2-Methylphenol	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
3+4-Methylphenol	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
N-Nitrosodimethylamine	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
N-Nitrosodiphenylamine	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Naphthalene	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
2-Nitroaniline	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
3-Nitroaniline	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
4-Nitroaniline	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
Nitrobenzene	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
2-Nitrophenol	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
4-Nitrophenol	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Pentachlorophenol	ND	40		µg/L	1	7/22/2022 2:47:52 PM	68843
Phenanthrene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Phenol	ND	20		µg/L	1	7/22/2022 2:47:52 PM	68843
Pyrene	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Pyridine	ND	40		µg/L	1	7/22/2022 2:47:52 PM	68843
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	7/22/2022 2:47:52 PM	68843
2,4,5-Trichlorophenol	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
2,4,6-Trichlorophenol	ND	10		µg/L	1	7/22/2022 2:47:52 PM	68843
Surr: 2-Fluorophenol	8.49	15-84.5	S	%Rec	1	7/22/2022 2:47:52 PM	68843
Surr: Phenol-d5	19.2	15-67		%Rec	1	7/22/2022 2:47:52 PM	68843
Surr: 2,4,6-Tribromophenol	1.66	15-108	S	%Rec	1	7/22/2022 2:47:52 PM	68843
Surr: Nitrobenzene-d5	78.3	16.8-112		%Rec	1	7/22/2022 2:47:52 PM	68843
Surr: 2-Fluorobiphenyl	68.5	15-101		%Rec	1	7/22/2022 2:47:52 PM	68843
Surr: 4-Terphenyl-d14	99.6	34.4-134		%Rec	1	7/22/2022 2:47:52 PM	68843
EPA METHOD 8260B: VOLATILES							Analyst: JR
Benzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Toluene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Ethylbenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Naphthalene	ND	2.0		µg/L	1	7/16/2022 1:24:33 AM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 49 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: DUP 7/13/2022

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022

Lab ID: 2207654-010

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Acetone	ND	10		µg/L	1	7/16/2022 1:24:33 AM	R89550
Bromobenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Bromoform	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Bromomethane	ND	3.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
2-Butanone	ND	10		µg/L	1	7/16/2022 1:24:33 AM	R89550
Carbon disulfide	ND	10		µg/L	1	7/16/2022 1:24:33 AM	R89550
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Chlorobenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Chloroethane	ND	2.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Chloroform	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Chloromethane	ND	3.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Dibromomethane	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
2-Hexanone	ND	10		µg/L	1	7/16/2022 1:24:33 AM	R89550
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2022 1:24:33 AM	R89550
Methylene Chloride	ND	3.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 50 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: DUP 7/13/2022

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022

Lab ID: 2207654-010

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Styrene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Vinyl chloride	ND	1.0		µg/L	1	7/16/2022 1:24:33 AM	R89550
Xylenes, Total	ND	1.5		µg/L	1	7/16/2022 1:24:33 AM	R89550
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	1	7/16/2022 1:24:33 AM	R89550
Surr: 4-Bromofluorobenzene	110	70-130		%Rec	1	7/16/2022 1:24:33 AM	R89550
Surr: Dibromofluoromethane	118	70-130		%Rec	1	7/16/2022 1:24:33 AM	R89550
Surr: Toluene-d8	103	70-130		%Rec	1	7/16/2022 1:24:33 AM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 51 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: EB 7/13/2022

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 10:25:00 AM

Lab ID: 2207654-011

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: METALS							Analyst: bcv
Uranium	ND	0.00050		mg/L	1	7/19/2022 11:54:57 AM	B89608
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	ND	5.0		mg/L	10	7/14/2022 10:45:21 PM	R89511
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	7/14/2022 10:45:21 PM	R89511
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	7/14/2022 10:45:21 PM	R89511
Sulfate	ND	5.0		mg/L	10	7/14/2022 10:45:21 PM	R89511
SM2320B: ALKALINITY							Analyst: CAS
Bicarbonate (As CaCO ₃)	ND	20.00		mg/L Ca	1	7/19/2022 7:06:16 PM	R89632
Carbonate (As CaCO ₃)	ND	2.000		mg/L Ca	1	7/19/2022 7:06:16 PM	R89632
Total Alkalinity (as CaCO ₃)	ND	20.00		mg/L Ca	1	7/19/2022 7:06:16 PM	R89632
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	ND	20.0		mg/L	1	7/22/2022 10:48:00 AM	68853
SM4500-H+B / 9040C: PH							Analyst: CAS
pH	6.16		H	pH units	1	7/19/2022 7:06:16 PM	R89632
EPA METHOD 7470A: MERCURY							Analyst: VP
Mercury	ND	0.00020		mg/L	1	7/19/2022 1:17:30 PM	68877
EPA METHOD 6010B: DISSOLVED METALS							Analyst: JRR
Arsenic	ND	0.020		mg/L	1	7/28/2022 11:37:46 AM	A89895
Barium	ND	0.020		mg/L	1	7/28/2022 11:37:46 AM	A89895
Cadmium	ND	0.0020		mg/L	1	7/28/2022 11:37:46 AM	A89895
Calcium	ND	1.0		mg/L	1	7/28/2022 11:37:46 AM	A89895
Chromium	ND	0.0060		mg/L	1	7/28/2022 11:37:46 AM	A89895
Lead	ND	0.020		mg/L	1	7/28/2022 11:37:46 AM	A89895
Selenium	ND	0.050		mg/L	1	7/28/2022 3:08:43 PM	A89895
Silver	ND	0.0050		mg/L	1	7/28/2022 11:37:46 AM	A89895
Sodium	ND	1.0		mg/L	1	7/28/2022 11:37:46 AM	A89895
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Acenaphthylene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Aniline	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Anthracene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Azobenzene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Benz(a)anthracene	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
Benzo(a)pyrene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Benzo(b)fluoranthene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 52 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: EB 7/13/2022

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 10:25:00 AM

Lab ID: 2207654-011

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Benzo(k)fluoranthene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Benzoic acid	ND	20		µg/L	1	7/22/2022 3:30:40 PM	68843
Benzyl alcohol	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Bis(2-chloroethyl)ether	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
4-Bromophenyl phenyl ether	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Butyl benzyl phthalate	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Carbazole	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
4-Chloroaniline	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
2-Chloronaphthalene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
2-Chlorophenol	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Chrysene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Di-n-butyl phthalate	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Di-n-octyl phthalate	ND	20		µg/L	1	7/22/2022 3:30:40 PM	68843
Dibenz(a,h)anthracene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Dibenzofuran	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
1,2-Dichlorobenzene	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
1,3-Dichlorobenzene	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
1,4-Dichlorobenzene	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
3,3'-Dichlorobenzidine	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Diethyl phthalate	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Dimethyl phthalate	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
2,4-Dichlorophenol	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
2,4-Dimethylphenol	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
2,4-Dinitrophenol	ND	20		µg/L	1	7/22/2022 3:30:40 PM	68843
2,4-Dinitrotoluene	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
2,6-Dinitrotoluene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Fluoranthene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Fluorene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Hexachlorobenzene	ND	20		µg/L	1	7/22/2022 3:30:40 PM	68843
Hexachlorobutadiene	ND	20		µg/L	1	7/22/2022 3:30:40 PM	68843
Hexachlorocyclopentadiene	ND	20		µg/L	1	7/22/2022 3:30:40 PM	68843
Hexachloroethane	ND	20		µg/L	1	7/22/2022 3:30:40 PM	68843
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 53 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: EB 7/13/2022

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 10:25:00 AM

Lab ID: 2207654-011

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Isophorone	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
1-Methylnaphthalene	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
2-Methylnaphthalene	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
2-Methylphenol	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
3+4-Methylphenol	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
N-Nitrosodimethylamine	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
N-Nitrosodiphenylamine	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Naphthalene	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
2-Nitroaniline	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
3-Nitroaniline	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
4-Nitroaniline	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
Nitrobenzene	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
2-Nitrophenol	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
4-Nitrophenol	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Pentachlorophenol	ND	40		µg/L	1	7/22/2022 3:30:40 PM	68843
Phenanthrene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Phenol	ND	20		µg/L	1	7/22/2022 3:30:40 PM	68843
Pyrene	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Pyridine	ND	40		µg/L	1	7/22/2022 3:30:40 PM	68843
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	7/22/2022 3:30:40 PM	68843
2,4,5-Trichlorophenol	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
2,4,6-Trichlorophenol	ND	10		µg/L	1	7/22/2022 3:30:40 PM	68843
Surr: 2-Fluorophenol	59.5	15-84.5		%Rec	1	7/22/2022 3:30:40 PM	68843
Surr: Phenol-d5	43.6	15-67		%Rec	1	7/22/2022 3:30:40 PM	68843
Surr: 2,4,6-Tribromophenol	67.0	15-108		%Rec	1	7/22/2022 3:30:40 PM	68843
Surr: Nitrobenzene-d5	70.4	16.8-112		%Rec	1	7/22/2022 3:30:40 PM	68843
Surr: 2-Fluorobiphenyl	65.0	15-101		%Rec	1	7/22/2022 3:30:40 PM	68843
Surr: 4-Terphenyl-d14	95.7	34.4-134		%Rec	1	7/22/2022 3:30:40 PM	68843
EPA METHOD 8260B: VOLATILES							Analyst: JR
Benzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Toluene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Ethylbenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Naphthalene	ND	2.0		µg/L	1	7/16/2022 1:53:06 AM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 54 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: EB 7/13/2022

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 10:25:00 AM

Lab ID: 2207654-011

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Acetone	ND	10		µg/L	1	7/16/2022 1:53:06 AM	R89550
Bromobenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Bromoform	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Bromomethane	ND	3.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
2-Butanone	ND	10		µg/L	1	7/16/2022 1:53:06 AM	R89550
Carbon disulfide	ND	10		µg/L	1	7/16/2022 1:53:06 AM	R89550
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Chlorobenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Chloroethane	ND	2.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Chloroform	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Chloromethane	ND	3.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Dibromomethane	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
2-Hexanone	ND	10		µg/L	1	7/16/2022 1:53:06 AM	R89550
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2022 1:53:06 AM	R89550
Methylene Chloride	ND	3.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 55 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: EB 7/13/2022

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 10:25:00 AM

Lab ID: 2207654-011

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Styrene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Vinyl chloride	ND	1.0		µg/L	1	7/16/2022 1:53:06 AM	R89550
Xylenes, Total	ND	1.5		µg/L	1	7/16/2022 1:53:06 AM	R89550
Surr: 1,2-Dichloroethane-d4	113	70-130		%Rec	1	7/16/2022 1:53:06 AM	R89550
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	1	7/16/2022 1:53:06 AM	R89550
Surr: Dibromofluoromethane	117	70-130		%Rec	1	7/16/2022 1:53:06 AM	R89550
Surr: Toluene-d8	105	70-130		%Rec	1	7/16/2022 1:53:06 AM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 56 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: FB 7/13/2022

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 10:25:00 AM

Lab ID: 2207654-012

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
Benzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Toluene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Ethylbenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Naphthalene	ND	2.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Acetone	ND	10		µg/L	1	7/16/2022 2:21:41 AM	R89550
Bromobenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Bromoform	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Bromomethane	ND	3.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
2-Butanone	ND	10		µg/L	1	7/16/2022 2:21:41 AM	R89550
Carbon disulfide	ND	10		µg/L	1	7/16/2022 2:21:41 AM	R89550
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Chlorobenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Chloroethane	ND	2.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Chloroform	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Chloromethane	ND	3.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Dibromomethane	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2022 2:21:41 AM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 57 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: FB 7/13/2022

Project: Wingate 2022 Annual Groundwater Sam

Collection Date: 7/13/2022 10:25:00 AM

Lab ID: 2207654-012

Matrix: GROUNDWA

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
2-Hexanone	ND	10		µg/L	1	7/16/2022 2:21:41 AM	R89550
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2022 2:21:41 AM	R89550
Methylene Chloride	ND	3.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Styrene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Vinyl chloride	ND	1.0		µg/L	1	7/16/2022 2:21:41 AM	R89550
Xylenes, Total	ND	1.5		µg/L	1	7/16/2022 2:21:41 AM	R89550
Surr: 1,2-Dichloroethane-d4	110	70-130		%Rec	1	7/16/2022 2:21:41 AM	R89550
Surr: 4-Bromofluorobenzene	111	70-130		%Rec	1	7/16/2022 2:21:41 AM	R89550
Surr: Dibromofluoromethane	117	70-130		%Rec	1	7/16/2022 2:21:41 AM	R89550
Surr: Toluene-d8	105	70-130		%Rec	1	7/16/2022 2:21:41 AM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 58 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: Trip Blank

Project: Wingate 2022 Annual Groundwater Sam

Collection Date:

Lab ID: 2207654-013

Matrix: TRIP BLANK

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
Benzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Toluene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Ethylbenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Naphthalene	ND	2.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
2-Methylnaphthalene	ND	4.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Acetone	ND	10		µg/L	1	7/16/2022 2:50:20 AM	R89550
Bromobenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Bromodichloromethane	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Bromoform	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Bromomethane	ND	3.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
2-Butanone	ND	10		µg/L	1	7/16/2022 2:50:20 AM	R89550
Carbon disulfide	ND	10		µg/L	1	7/16/2022 2:50:20 AM	R89550
Carbon Tetrachloride	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Chlorobenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Chloroethane	ND	2.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Chloroform	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Chloromethane	ND	3.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
2-Chlorotoluene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
4-Chlorotoluene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
cis-1,2-DCE	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Dibromochloromethane	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Dibromomethane	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,1-Dichloroethane	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,1-Dichloroethene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,2-Dichloropropane	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,3-Dichloropropane	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
2,2-Dichloropropane	ND	2.0		µg/L	1	7/16/2022 2:50:20 AM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 59 of 77

Analytical Report

Lab Order 2207654

Date Reported: 8/1/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon

Client Sample ID: Trip Blank

Project: Wingate 2022 Annual Groundwater Sam

Collection Date:

Lab ID: 2207654-013

Matrix: TRIP BLANK

Received Date: 7/14/2022 9:35:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: JR
1,1-Dichloropropene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Hexachlorobutadiene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
2-Hexanone	ND	10		µg/L	1	7/16/2022 2:50:20 AM	R89550
Isopropylbenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
4-Isopropyltoluene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
4-Methyl-2-pentanone	ND	10		µg/L	1	7/16/2022 2:50:20 AM	R89550
Methylene Chloride	ND	3.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
n-Butylbenzene	ND	3.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
n-Propylbenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
sec-Butylbenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Styrene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
tert-Butylbenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
trans-1,2-DCE	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Trichlorofluoromethane	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Vinyl chloride	ND	1.0		µg/L	1	7/16/2022 2:50:20 AM	R89550
Xylenes, Total	ND	1.5		µg/L	1	7/16/2022 2:50:20 AM	R89550
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	7/16/2022 2:50:20 AM	R89550
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	7/16/2022 2:50:20 AM	R89550
Surr: Dibromofluoromethane	116	70-130		%Rec	1	7/16/2022 2:50:20 AM	R89550
Surr: Toluene-d8	103	70-130		%Rec	1	7/16/2022 2:50:20 AM	R89550

Refer to the QC Summary report and sample login checklist for flagged QC data 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 60 of 77

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2207654

01-Aug-22

Client: Marathon**Project:** Wingate 2022 Annual Groundwater Sampling

Sample ID: MB	SampType: MBLK	TestCode: EPA 200.8: Metals								
Client ID: PBW	Batch ID: B89608	RunNo: 89608								
Prep Date:	Analysis Date: 7/19/2022	SeqNo: 3191607 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.00050								

Sample ID: LCSLL	SampType: LCSLL	TestCode: EPA 200.8: Metals								
Client ID: BatchQC	Batch ID: B89608	RunNo: 89608								
Prep Date:	Analysis Date: 7/19/2022	SeqNo: 3191608 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.00053	0.00050	0.0005000	0	107	50	150			

Sample ID: LCS	SampType: LCS	TestCode: EPA 200.8: Metals								
Client ID: LCSW	Batch ID: B89608	RunNo: 89608								
Prep Date:	Analysis Date: 7/19/2022	SeqNo: 3191609 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.013	0.00050	0.01250	0	100	85	115			

Sample ID: MB-68844	SampType: MBLK	TestCode: EPA 200.8: Metals								
Client ID: PBW	Batch ID: 68844	RunNo: 89655								
Prep Date: 7/18/2022	Analysis Date: 7/20/2022	SeqNo: 3191947 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	0.00050								

Sample ID: MSLCSLL-68844	SampType: LCSLL	TestCode: EPA 200.8: Metals								
Client ID: BatchQC	Batch ID: 68844	RunNo: 89655								
Prep Date: 7/18/2022	Analysis Date: 7/20/2022	SeqNo: 3191948 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.00053	0.00050	0.0005000	0	106	50	150			

Sample ID: MSLCS-68844	SampType: LCS	TestCode: EPA 200.8: Metals								
Client ID: LCSW	Batch ID: 68844	RunNo: 89655								
Prep Date: 7/18/2022	Analysis Date: 7/20/2022	SeqNo: 3191949 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	0.013	0.00050	0.01250	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 Quantitative 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

Page 61 of 77

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2207654

01-Aug-22

Client: Marathon**Project:** Wingate 2022 Annual Groundwater Sampling

Sample ID: MB	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R89511	RunNo: 89511								
Prep Date:	Analysis Date: 7/14/2022	SeqNo: 3185622 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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: R89511	RunNo: 89511								
Prep Date:	Analysis Date: 7/14/2022	SeqNo: 3185623 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			
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	104	90	110			
Sulfate	10	0.50	10.00	0	104	90	110			

Sample ID: MB	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBW	Batch ID: R89840	RunNo: 89840								
Prep Date:	Analysis Date: 7/27/2022	SeqNo: 3199299 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: R89840	RunNo: 89840								
Prep Date:	Analysis Date: 7/27/2022	SeqNo: 3199300 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	99.7	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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2207654

01-Aug-22

Client: Marathon**Project:** Wingate 2022 Annual Groundwater Sampling

Sample ID: 100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: R89550			RunNo: 89550						
Prep Date:	Analysis Date: 7/15/2022			SeqNo: 3187577			Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.8	70	130			
Toluene	19	1.0	20.00	0	96.5	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	98.0	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.1	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		113	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: 2207654-001ams	SampType: MS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: WMW-8	Batch ID: R89550			RunNo: 89550						
Prep Date:	Analysis Date: 7/15/2022			SeqNo: 3187579			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			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	99.8	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	99.5	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	98.0	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	12		10.00		122	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID: 2207654-001amsd	SampType: MSD			TestCode: EPA Method 8260B: VOLATILES						
Client ID: WMW-8	Batch ID: R89550			RunNo: 89550						
Prep Date:	Analysis Date: 7/15/2022			SeqNo: 3187580			Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.8	70	130	5.79	20	
Toluene	19	1.0	20.00	0	95.6	70	130	5.19	20	
Chlorobenzene	19	1.0	20.00	0	96.2	70	130	3.68	20	
1,1-Dichloroethene	19	1.0	20.00	0	94.2	70	130	5.54	20	
Trichloroethene (TCE)	19	1.0	20.00	0	94.5	70	130	3.70	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		108	70	130	0	0	
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130	0	0	
Surr: Dibromofluoromethane	12		10.00		118	70	130	0	0	
Surr: Toluene-d8	10		10.00		100	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 Quantitative Limit	RL Reporting Limit
S % Recovery outside of range due to dilution or matrix interference	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207654

01-Aug-22

Client: Marathon

Project: Wingate 2022 Annual Groundwater Sampling

Sample ID: mb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R89550			RunNo: 89550						
Prep Date:	Analysis Date: 7/15/2022			SeqNo: 3187595		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	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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2207654

01-Aug-22

Client: Marathon**Project:** Wingate 2022 Annual Groundwater Sampling

Sample ID: mb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R89550			RunNo: 89550						
Prep Date:	Analysis Date: 7/15/2022			SeqNo: 3187595		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		108	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	11		10.00		114	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: mb2	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R89550			RunNo: 89550						
Prep Date:	Analysis Date: 7/15/2022			SeqNo: 3187806		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								

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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207654

01-Aug-22

Client: Marathon

Project: Wingate 2022 Annual Groundwater Sampling

Sample ID: mb2	SampType: MBLK	TestCode: EPA Method 8260B: VOLATILES								
Client ID: PBW	Batch ID: R89550	RunNo: 89550								
Prep Date:	Analysis Date: 7/15/2022	SeqNo: 3187806	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	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	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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Page 66 of 77

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2207654

01-Aug-22

Client: Marathon**Project:** Wingate 2022 Annual Groundwater Sampling

Sample ID: mb2	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R89550			RunNo: 89550						
Prep Date:	Analysis Date: 7/15/2022			SeqNo: 3187806		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								
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								
tert-Butyl alcohol	ND	25								
Surr: 1,2-Dichloroethane-d4	11		10.00		110	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		111	70	130			
Surr: Dibromofluoromethane	12		10.00		117	70	130			
Surr: Toluene-d8	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	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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207654

01-Aug-22

Client: Marathon

Project: Wingate 2022 Annual Groundwater Sampling

Sample ID: mb-68843	SampType: MBLK	TestCode: EPA Method 8270C: Semivolatiles								
Client ID: PBW	Batch ID: 68843	RunNo: 89675								
Prep Date: 7/18/2022	Analysis Date: 7/21/2022	SeqNo: 3193520	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	5.0								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	5.0								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	5.0								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	10								
2,4-Dinitrophenol	ND	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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Page 68 of 77

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207654

01-Aug-22

Client: Marathon

Project: Wingate 2022 Annual Groundwater Sampling

Sample ID: mb-68843	SampType: MBLK	TestCode: EPA Method 8270C: Semivolatiles								
Client ID: PBW	Batch ID: 68843	RunNo: 89675								
Prep Date: 7/18/2022	Analysis Date: 7/21/2022	SeqNo: 3193520 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	20								
Hexachlorobutadiene	ND	20								
Hexachlorocyclopentadiene	ND	20								
Hexachloroethane	ND	20								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	5.0								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	5.0								
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	5.0								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	5.0								
Nitrobenzene	ND	5.0								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	40								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	74		200.0		37.0	29.4	87.7			
Surr: Phenol-d5	56		200.0		28.1	28.5	64.7			S
Surr: 2,4,6-Tribromophenol	87		200.0		43.4	18.6	129			
Surr: Nitrobenzene-d5	44		100.0		44.1	36.9	103			
Surr: 2-Fluorobiphenyl	37		100.0		37.4	38.1	99.9			S
Surr: 4-Terphenyl-d14	77		100.0		77.5	48	155			

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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2207654

01-Aug-22

Client: Marathon**Project:** Wingate 2022 Annual Groundwater Sampling

Sample ID: Ics-68843	SampType: LCS				TestCode: EPA Method 8270C: Semivolatiles					
Client ID: LCSW	Batch ID: 68843				RunNo: 89675					
Prep Date: 7/18/2022	Analysis Date: 7/21/2022				SeqNo: 3193521	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	62	10	100.0	0	62.3	21.3	104			
4-Chloro-3-methylphenol	130	5.0	200.0	0	66.4	31.8	104			
2-Chlorophenol	140	5.0	200.0	0	70.5	26.9	105			
1,4-Dichlorobenzene	55	5.0	100.0	0	55.3	15	89.8			
2,4-Dinitrotoluene	53	5.0	100.0	0	52.9	22.9	92.4			
N-Nitrosodi-n-propylamine	61	5.0	100.0	0	60.6	33.2	98.8			
4-Nitrophenol	83	10	200.0	0	41.4	27.4	64.2			
Pentachlorophenol	120	40	200.0	0	57.8	37.6	93			
Phenol	82	20	200.0	0	40.8	17	61.1			
Pyrene	81	10	100.0	0	81.3	61	123			
1,2,4-Trichlorobenzene	56	5.0	100.0	0	56.0	15	91.7			
Surr: 2-Fluorophenol	97		200.0		48.7	29.4	87.7			
Surr: Phenol-d5	73		200.0		36.7	28.5	64.7			
Surr: 2,4,6-Tribromophenol	120		200.0		60.3	18.6	129			
Surr: Nitrobenzene-d5	63		100.0		63.1	36.9	103			
Surr: 2-Fluorobiphenyl	56		100.0		55.6	38.1	99.9			
Surr: 4-Terphenyl-d14	91		100.0		91.1	48	155			

Sample ID: Icsd-68843	SampType: LCSD				TestCode: EPA Method 8270C: Semivolatiles					
Client ID: LCSS02	Batch ID: 68843				RunNo: 89675					
Prep Date: 7/18/2022	Analysis Date: 7/21/2022				SeqNo: 3193522	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	73	10	100.0	0	73.2	21.3	104	16.0	45.3	
4-Chloro-3-methylphenol	170	5.0	200.0	0	82.5	31.8	104	21.6	54.5	
2-Chlorophenol	180	5.0	200.0	0	87.8	26.9	105	21.9	44.5	
1,4-Dichlorobenzene	65	5.0	100.0	0	64.9	15	89.8	16.0	39.6	
2,4-Dinitrotoluene	62	5.0	100.0	0	62.4	22.9	92.4	16.5	33.1	
N-Nitrosodi-n-propylamine	76	5.0	100.0	0	76.2	33.2	98.8	22.7	48	
4-Nitrophenol	98	10	200.0	0	48.9	27.4	64.2	16.6	14.7	R
Pentachlorophenol	130	40	200.0	0	66.0	37.6	93	13.3	15	
Phenol	100	20	200.0	0	52.4	17	61.1	24.9	42.5	
Pyrene	87	10	100.0	0	87.4	61	123	7.18	11.8	
1,2,4-Trichlorobenzene	69	5.0	100.0	0	69.2	15	91.7	21.1	34.2	
Surr: 2-Fluorophenol	130		200.0		63.5	29.4	87.7	0	0	
Surr: Phenol-d5	100		200.0		49.9	28.5	64.7	0	0	
Surr: 2,4,6-Tribromophenol	150		200.0		74.5	18.6	129	0	0	
Surr: Nitrobenzene-d5	80		100.0		80.0	36.9	103	0	0	
Surr: 2-Fluorobiphenyl	71		100.0		70.9	38.1	99.9	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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Page 70 of 77

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2207654

01-Aug-22

Client: Marathon**Project:** Wingate 2022 Annual Groundwater Sampling

Sample ID: lcsd-68843	SampType: LCSD			TestCode: EPA Method 8270C: Semivolatiles						
Client ID: LCSS02	Batch ID: 68843			RunNo: 89675						
Prep Date: 7/18/2022	Analysis Date: 7/21/2022			SeqNo: 3193522	Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	100		100.0		100	48	155	0	0	

Sample ID: mb-68843	SampType: MBLK			TestCode: EPA Method 8270C: Semivolatiles						
Client ID: PBW	Batch ID: 68843			RunNo: 89740						
Prep Date: 7/18/2022	Analysis Date: 7/22/2022			SeqNo: 3195137	Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	5.0								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	5.0								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	5.0								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								

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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207654

01-Aug-22

Client: Marathon

Project: Wingate 2022 Annual Groundwater Sampling

Sample ID: mb-68843	SampType: MBLK	TestCode: EPA Method 8270C: Semivolatiles								
Client ID: PBW	Batch ID: 68843	RunNo: 89740								
Prep Date: 7/18/2022	Analysis Date: 7/22/2022	SeqNo: 3195137	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	10								
2,4-Dinitrophenol	ND	20								
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	20								
Hexachlorobutadiene	ND	20								
Hexachlorocyclopentadiene	ND	20								
Hexachloroethane	ND	20								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	5.0								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	5.0								
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	5.0								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	5.0								
Nitrobenzene	ND	5.0								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	40								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								

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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Page 72 of 77

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2207654

01-Aug-22

Client: Marathon

Project: Wingate 2022 Annual Groundwater Sampling

Sample ID: mb-68843		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles						
Client ID: PBW		Batch ID: 68843		RunNo: 89740						
Prep Date: 7/18/2022		Analysis Date: 7/22/2022		SeqNo: 3195137			Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	76		200.0		37.8	15	84.5			
Surr: Phenol-d5	58		200.0		28.9	15	67			
Surr: 2,4,6-Tribromophenol	82		200.0		41.1	15	108			
Surr: Nitrobenzene-d5	43		100.0		43.2	16.8	112			
Surr: 2-Fluorobiphenyl	39		100.0		39.0	15	101			
Surr: 4-Terphenyl-d14	79		100.0		78.7	34.4	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 Quantitative 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#: 2207654

01-Aug-22

Client: Marathon**Project:** Wingate 2022 Annual Groundwater Sampling

Sample ID: MB-68877	SampType: MBLK	TestCode: EPA Method 7470A: Mercury								
Client ID: PBW	Batch ID: 68877	RunNo: 89613								
Prep Date: 7/19/2022	Analysis Date: 7/19/2022	SeqNo: 3190039	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: LCSLL-68877	SampType: LCSLL	TestCode: EPA Method 7470A: Mercury								
Client ID: BatchQC	Batch ID: 68877	RunNo: 89613								
Prep Date: 7/19/2022	Analysis Date: 7/19/2022	SeqNo: 3190040	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020	0.0001500	0	56.5	50	150			

Sample ID: LCS-68877	SampType: LCS	TestCode: EPA Method 7470A: Mercury								
Client ID: LCSW	Batch ID: 68877	RunNo: 89613								
Prep Date: 7/19/2022	Analysis Date: 7/19/2022	SeqNo: 3190041	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	99.7	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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2207654

01-Aug-22

Client: Marathon**Project:** Wingate 2022 Annual Groundwater Sampling

Sample ID: MB-A		SampType: MBLK		TestCode: EPA Method 6010B: Dissolved Metals						
Client ID: PBW		Batch ID: A89895		RunNo: 89895						
Prep Date:		Analysis Date: 7/28/2022		SeqNo: 3202284		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Lead	ND	0.020								
Selenium	ND	0.050								
Silver	ND	0.0050								
Sodium	ND	1.0								

Sample ID: LCS-A		SampType: LCS		TestCode: EPA Method 6010B: Dissolved Metals						
Client ID: LCSW		Batch ID: A89895		RunNo: 89895						
Prep Date:		Analysis Date: 7/28/2022		SeqNo: 3202286		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.50	0.020	0.5000	0	99.1	80	120			
Barium	0.47	0.020	0.5000	0	93.7	80	120			
Cadmium	0.48	0.0020	0.5000	0	95.1	80	120			
Calcium	51	1.0	50.00	0	102	80	120			
Chromium	0.48	0.0060	0.5000	0	96.4	80	120			
Lead	0.48	0.020	0.5000	0	97.0	80	120			
Selenium	0.48	0.050	0.5000	0	95.2	80	120			
Silver	0.093	0.0050	0.1000	0	93.2	80	120			
Sodium	50	1.0	50.00	0	100	80	120			

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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2207654

01-Aug-22

Client: Marathon**Project:** Wingate 2022 Annual Groundwater Sampling

Sample ID: mb-1 alk	SampType: mblk	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R89632	RunNo: 89632								
Prep Date:	Analysis Date: 7/19/2022	SeqNo: 3191170 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: lcs-1 alk	SampType: lcs	TestCode: SM2320B: Alkalinity								
Client ID: LCSW	Batch ID: R89632	RunNo: 89632								
Prep Date:	Analysis Date: 7/19/2022	SeqNo: 3191171 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	75.88	20.00	80.00	0	94.8	90	110			

Sample ID: mb-1 alk	SampType: mblk	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R89743	RunNo: 89743								
Prep Date:	Analysis Date: 7/20/2022	SeqNo: 3195482 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: lcs-1 alk	SampType: lcs	TestCode: SM2320B: Alkalinity								
Client ID: LCSW	Batch ID: R89743	RunNo: 89743								
Prep Date:	Analysis Date: 7/20/2022	SeqNo: 3195484 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.36	20.00	80.00	0	96.7	90	110			

Sample ID: mb-1 alk	SampType: mblk	TestCode: SM2320B: Alkalinity								
Client ID: PBW	Batch ID: R89866	RunNo: 89866								
Prep Date:	Analysis Date: 7/28/2022	SeqNo: 3202007 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: lcs-1 alk	SampType: lcs	TestCode: SM2320B: Alkalinity								
Client ID: LCSW	Batch ID: R89866	RunNo: 89866								
Prep Date:	Analysis Date: 7/28/2022	SeqNo: 3202008 Units: mg/L CaCO3								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.52	20.00	80.00	0	96.9	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 Quantitative 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

Page 76 of 77

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2207654

01-Aug-22

Client: Marathon**Project:** Wingate 2022 Annual Groundwater Sampling

Sample ID: MB-68853	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 68853	RunNo: 89702								
Prep Date: 7/18/2022	Analysis Date: 7/22/2022	SeqNo: 3193956 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-68853	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch ID: 68853	RunNo: 89702								
Prep Date: 7/18/2022	Analysis Date: 7/22/2022	SeqNo: 3193957 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

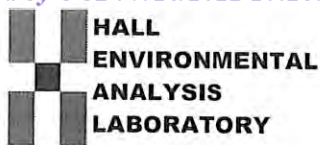
Sample ID: 2207654-001CDUP	SampType: DUP	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: WMW-8	Batch ID: 68853	RunNo: 89702								
Prep Date: 7/18/2022	Analysis Date: 7/22/2022	SeqNo: 3193959 Units: mg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	855	20.0						0.815	10	*

Qualifiers:

* Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 PQL Practical Quantitative 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

Page 77 of 77



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

Sample Log-In Check List

Client Name: **Marathon**Work Order Number: **2207654**

RcptNo: 1

Received By: **Andy Freeman**

7/14/2022 9:35:00 AM

Completed By: **Desiree Dominguez**

7/14/2022 11:58:32 AM

Reviewed By: **See 7/14/22**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 ☐
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: **31**
(<2 or >12 unless noted)
Adjusted? **NO** yes
Checked by: **KPA 7.14.22**

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 0.5ml of HNO₃ to sample sample**

17. Cooler Information **002, 007, 009D. Added 0.4ml of HNO₃ to sample 009E for pH <2 - KPA 7.14.22**
- | Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1 | 3.9 | Good | | | | |
| 2 | 2.9 | Good | | | | |
| 3 | 4.2 | Good | | | | |

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

X EDD (Type)

Standard Rush_X

Project Name: **Wingate 2022 Annual Groundwater Sampling**

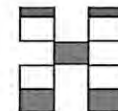
Project #: **697-087-002**

Project Manager:
Lesli Alexander/ Mackenzie Swift

Sampler:
On Ice: ☒ Yes ☐ No

of Coolers: 3

Cooler Temp (including CF):



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.	8260 - VOC	8270 - SVOC	6010 - Dissolved Metals	7470 - Mercury	SM2320B - Alkalinity, Total as CaCO3	SM2540C - Total Dissolved Solids	9040 - pH	300.0 Chloride, Nitrogen Nitrate, Sulfate	200.8 - Total Uranium				
7/12/2022	12:20	GW	WMW-8	8		-001	X	X	X	X	X	X	X	X	X				
7/12/2022	13:23	GW	WMW-3	8		-002	X	X	X	X	X	X	X	X	X				
7/13/2022	8:55	GW	WMW-6	8		-003	X	X	X	X	X	X	X	X	X				
7/13/2022	9:40	GW	WMW-1R	8		-004	X	X	X	X	X	X	X	X	X				
7/13/2022	10:25	GW	WMW-5	8		-005	X	X	X	X	X	X	X	X	X				
7/13/2022	11:15	GW	WMW-7	8		-006	X	X	X	X	X	X	X	X	X				
7/13/2022	11:50	GW	WMW-9	8		-007	X	X	X	X	X	X	X	X	X				
7/13/2022	13:45	GW	WMW-4	8		-008	X	X	X	X	X	X	X	X	X				
7/13/2022	14:20	GW	WMW-2	8		-009	X	X	X	X	X	X	X	X	X				
7/13/2022	-	GW	DUP 7/13/2022	8		-010	X	X	X	X	X	X	X	X	X				
7/13/2022	10:25	WATER	EB 7/13/2022	8		-011	X	X	X	X	X	X	X	X	X				
7/13/2022	10:25	WATER	FB 7/13/2022	3		-012	X												

Date: 7/14/2022 Time: 8:00 Relinquished by:

Date: Time: Relinquished by:

Received by: Via: Date: 7/14/22 Time: 0935

Received by: Via: Date: Time:

Please rush these
 4.1-0.2=3.9°C
 2.1-0.2=2.9°C
 4.4-0.2=4.2°C

Trip Blank-003
 KPa 7.14.22

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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

QUOTATION

Quote#: 2442

Date: 3/10/2022

Company: Trihydro Corporation
Contact: Mackensie Swift
Address: 1252 Commerce Dr.

Laramie, Wy 82072

Phone:
Fax:

Project: Wingate Groundwater Sampling
TAT: 10 working days
QC Level: LEVEL II
Project Manager: Andy Freeman
Sales Rep:
Quote Expires: 12/31/2022

Item Description	Test	Matrix	Remarks	Qty	Unit Price	Total
EPA Method 8260B: VOLATILES	SW8260B	Aqueous		15	50.00	750.00
EPA Method 8270C: Semivolatiles	SW8270C	Aqueous		13	115.00	1,495.00
EPA Method 7470A: Mercury	SW7470	Aqueous		13	25.00	325.00
SM2320B: Alkalinity	SM2320B	Aqueous		13	15.00	195.00
SM2540C MOD: Total Dissolved S	M2540C	Aqueous		13	15.00	195.00
SM4500-H+B / 9040C: pH	M4500-H+B	Aqueous		13	10.00	130.00
EPA Method 300.0: Anions	E300	Aqueous	Cl, NO3, SO4	13	30.00	390.00
EPA 200.8: Metals	E200.8	Aqueous	U	13	25.00	325.00
EPA Method 6020A: Dissolved Met	SW6020	Aqueous	As, Ba, Cd, Ca, Cr, Pb, Se, Ag, Na	13	70.00	910.00
EPA Method 8260B: Volatiles	SW8260B	Soil		4	50.00	200.00
EPA Method 8270C: Semivolatiles	SW8270C	Soil		4	115.00	460.00
EPA Method 6020A: Metals	E200.8	Soil	As, Ba, Cd, Ca, Cr, Pb, Se, U, Ag, Na	4	80.00	320.00
EPA Method 7471B: Mercury	SW7471	Soil		4	25.00	100.00
EPA Method 300.0: Anions	E300	Soil		4	40.00	160.00

Miscellaneous Charge Summary

Item	Unit	Qty	Total
Methanol Kit	18.00	4	72.00
Filters	18.00	15	270.00

Sub Total: \$5,955.00
Misc: \$342.00
Surcharge: 0%

TOTAL: \$6,297.00

Sincerely,

Andy Freeman
Laboratory Manager
Phone: 505-345-3975
Email: andy@hallenvironmental.com

Terms and Conditions:

Hall Environmental Analysis Laboratory (HEAL) will provide all sampling containers, coolers, chains of custody and labels. A standard data deliverables package and QC package will be provided with this report, including lab spikes and lab spike duplicates. NM State tax has not been included in this quotation. Thank you, for the opportunity to bid on this project. Please feel free to call with any questions (505) 345-3975. Invoices can be paid via Visa, Master Card, American Express, Company Check or Cash.

Appendix C. Tier II Data Validation Report



Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental
Project Name: Wingate 2022 Annual Groundwater	Sample Matrix: Groundwater
Project Number: 697-080-002 Task 0016	Sample Start Date: 07/12/2022
Date Validated: 09/01/2022	Sample End Date: 07/13/2022
Parameters Included: • Volatile Organic Compounds (VOC) by Test Methods for Evaluating Solid Waste (SW-846) Method 8260B • Semivolatile Organic Compounds (SVOC) by SW-846 Method 8270C • Total Dissolved Solids (TDS) by Standard Methods for the Examination of Water and Wastewater (SM) Method 2540C • pH by SM Method 4500H+B • Alkalinity by SM Method 2320B • Dissolved Metals by SW-846 Method 6010B • Total Mercury by SW-846 Method 7470A • Total Uranium by Environmental Protection Agency (EPA) Method 200.8 • Anions by Methods for Chemical Analysis of Water and Wastes (MCAWW) Method 300.0	
Laboratory Project ID: 2207654	
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
- 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 blank
- 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
WMW-8	2207654-001
WMW-3	2207654-002
WMW-6	2207654-003
WMW-1R	2207654-004
WMW-5	2207654-005
WMW-7	2207654-006
WMW-9	2207654-007
WMW-4	2207654-008
WMW-2	2207654-009
DUP 7/13/2022	2207654-010
EB 7/13/2022	2207654-011
FB 7/13/2022	2207654-012
Trip Blank	2207654-013



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 Duplicate (Items 20 and 21)
- ✓ Laboratory Duplicate (Item 22)

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, April 2022.





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.

<u>Qualifier</u>	<u>Definition</u>
J	Estimated concentration
UJ	Estimated reporting limit
JB	Estimated concentration due to blank contamination
U	Evaluated to be undetected at the reporting limit
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 1,558 data points. The data completeness calculation does not include any submitted blank sample results. A total of 15 data points were rejected. The data completeness measure for this data package is calculated to be 99.04% 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 non-conformances regarding the analytical data. <u>Method 8270C</u> : "S" flags denote a surrogate or spike recovery outside of the standard limits.	
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. H – Holding times for preparation or analysis exceeded. J – Analyte detected below quantitation limits. R – RPD limit exceeded. 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 a laboratory 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. <u>Method 8260B</u> : Dilutions of 50 times were applied for the VOC analysis of samples WMW-9 and WMW-2; and dilutions of 500 times were applied for the benzene analysis of samples WMW-9 and WMW-2. <u>Method 6010B</u> : Dilutions of 5 to 100 times were applied for the dissolved calcium and sodium analyses of select samples. <u>Method 200.8</u> : Dilutions of 5 times were applied for the uranium analysis of samples WMW-3, WMW-1R, and WMW-7. <u>Method 300.0</u> : Dilutions of 5 to 100 times were applied for the anions analyses of select samples. <u>SM 2320B</u> : Dilutions of 2.5 times were applied for the alkalinity analyses of samples WMW-9 and WMW-2.	
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?	Yes
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 2.9°C and 4.2°C as noted on the Sample Log-In Check List.	



VALIDATION CRITERIA CHECKLIST																																	
7. Were samples extracted/digested and analyzed within method-specified or technical holding times?	No																																
Comments: The samples were extracted/digested and/or analyzed within method-specific holding times, with the following exceptions. SM 2320B: Sample WMW-9 was analyzed for alkalinity analytes outside the method-specific holding time of 14 days by approximately 1 day. The alkalinity results were qualified J if detected and R if not detected in sample WMW-9. SM 4500H+B: The samples were analyzed for pH outside the method-specific holding time of 15 minutes. The pH results were qualified as J to indicate estimated concentrations. The samples were analyzed within the method-specific holding time for SM 2540C TDS analysis. The laboratory noted in an email to the project team that the analysis date shown in the laboratory report was when the sample was weighed; however, the sample was filtered before then within 7 days of collection. Qualification was not required based on this information.																																	
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), milligrams per liter as calcium carbonate (mgCaCO₃/L), and pH Standard Units (SU), 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. <table border="1"> <thead> <tr> <th>Method</th> <th>Analytes</th> <th>Batch</th> <th>MS Sample Source</th> </tr> </thead> <tbody> <tr> <td>200.8</td> <td>Total Uranium</td> <td>B89608</td> <td>Not Prepared</td> </tr> <tr> <td>200.8</td> <td>Total Uranium</td> <td>68844</td> <td>Not Prepared</td> </tr> <tr> <td>300.0</td> <td>Anions</td> <td>R89511</td> <td>Not Prepared</td> </tr> <tr> <td>300.0</td> <td>Nitrate + Nitrite as Nitrogen</td> <td>R89840</td> <td>Not Prepared</td> </tr> <tr> <td>8260B</td> <td>VOC</td> <td>R89550</td> <td>WMW-8</td> </tr> <tr> <td>8270C</td> <td>SVOC</td> <td>68843</td> <td>Not Prepared</td> </tr> <tr> <td>7470A</td> <td>Total Mercury</td> <td>68877</td> <td>Not Prepared</td> </tr> </tbody> </table>		Method	Analytes	Batch	MS Sample Source	200.8	Total Uranium	B89608	Not Prepared	200.8	Total Uranium	68844	Not Prepared	300.0	Anions	R89511	Not Prepared	300.0	Nitrate + Nitrite as Nitrogen	R89840	Not Prepared	8260B	VOC	R89550	WMW-8	8270C	SVOC	68843	Not Prepared	7470A	Total Mercury	68877	Not Prepared
Method	Analytes	Batch	MS Sample Source																														
200.8	Total Uranium	B89608	Not Prepared																														
200.8	Total Uranium	68844	Not Prepared																														
300.0	Anions	R89511	Not Prepared																														
300.0	Nitrate + Nitrite as Nitrogen	R89840	Not Prepared																														
8260B	VOC	R89550	WMW-8																														
8270C	SVOC	68843	Not Prepared																														
7470A	Total Mercury	68877	Not Prepared																														



VALIDATION CRITERIA CHECKLIST

Method	Analytes	Batch	MS Sample Source
6010B	Dissolved Metals	A89895	Not Prepared
2320B	Alkalinity	R89632	Not Prepared
2320B	Alkalinity	R89743	Not Prepared
2320B	Alkalinity	R89866	Not Prepared
2540C	TDS	68853	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 MS/MSD percent recoveries and RPDs for project samples were within 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? 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 8270C: The LCS/LCSD RPD value for 4-nitrophenol from batch 68843 exceeded the laboratory QC limit of 14.7% at 16.6%. 4-Nitrophenol was not detected in the associated samples and was qualified as UJ to indicate estimated reporting limits due to poor precision.

17. Were surrogate recoveries within laboratory QC limits? No

Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions.

Method	Sample	Surrogate	Surrogate Recovery	QC Limits
8270C	WMW-3	2,4,6-Tribromophenol	16.3%	18.6-129%
8270C	WMW-5	2,4,6-Tribromophenol	12.7%	18.6-129%
8270C	DUP 7/13/2022	2-Fluorophenol	8.49%	15-84.5%
8270C	DUP 7/13/2022	2,4,6-Tribromophenol	1.66%	15-108%

Since Method 8270C surrogate associations were not available from the laboratory, qualification was assigned to all 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 WMW-7, WMW-9, and WG-DUP-7/22/2021, and qualification of sample data was not required, with the following exception.

Method 8270C: The recoveries of the acid fraction surrogates 2-fluorophenol and 2,4,6-tribromophenol for sample DUP 7/13/2022 were less than 10%. The target analytes associated with these surrogates were not detected in sample DUP 7/13/2022, and the results were assigned R qualifiers to indicate rejected data due to evidence of extremely low bias.

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 7/13/2022, and one equipment blank sample, EB 7/13/2022, 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? Yes

Comments: Target analytes were reported as not detected in the trip, field, and equipment blanks, with the following exceptions.

Blank Sample ID	Method	Analyte	Concentration
Trip Blank	8260B	Acetone	2.6 µg/L
FB 7/13/2022	8260B	2-Butanone	5.2 µg/L
EB 7/13/2022	8260B	2-Butanone	4.2 µg/L
EB 7/13/2022	6010B	Silver, Dissolved	0.0012 mg/L

Acetone was not detected in the associated samples and qualification of data was not required based on this trip blank detection.

The 2-butanone result for EB 7/13/2022 was less than the field blank detection and the result was assigned a U qualifier.

Dissolved silver was detected in associated samples at concentration less than the applicable reporting limits and the results were assigned U qualifiers. The detection of dissolved silver in sample WMW-1R was greater than the reporting limit but less than 10 times the equipment blank concentration and the result was assigned a JB qualifier. The non-detect results for dissolved silver in associated samples 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 7/13/2022 was collected as a field duplicate of sample WMW-5.

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 data validation or laboratory QC limits? Yes

Comments: A laboratory duplicate was prepared for SM 2540C TDS batch 68853 from sample WMW-8. The laboratory duplicate RPD was within laboratory QC limits.

23. Were the following data relationships realistic?

- Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270)? N/A

Comments: Target analytes were not reported by more than one method.

- Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results? N/A

Comments: Samples were analyzed for both total and dissolved metals fractions.



FIELD DUPLICATE SUMMARY

Client Sample ID: WMW-5 Field Duplicate Sample ID: DUP 7/13/2022				
Analyte	Method	Laboratory Result	Duplicate Result	Relative Percent Difference (RPD)
Chloride	300.0	450 mg/L	450 mg/L	0.0%
Nitrogen, Nitrate	300.0	0.27 mg/L	ND (1.0 mg/L)	DL
Sulfate	300.0	2,200 mg/L	2,200 mg/L	0.0%
Uranium	200.8	0.021 mg/L	0.018 mg/L	15.4%
Barium, Dissolved	6010B	0.0053 mg/L	0.0050 mg/L	5.8% +/-RL
Calcium, Dissolved	6010B	220 mg/L	220 mg/L	0.0%
Selenium, Dissolved	6010B	0.047 mg/L	0.039 mg/L	18.6% +/-RL
Silver, Dissolved	6010B	0.0037 mg/L	0.0042 mg/L	12.7% +/-RL
Sodium, Dissolved	6010B	1,200 mg/L	1,200 mg/L	0.0%
pH	4500-H+B	7.47 Std Units	7.73 Std Units	3.4%
Bicarbonate	2320B	717.6 mgCaCO ₃ /L	730.8 mgCaCO ₃ /L	1.8%
Total Alkalinity	2320B	717.6 mgCaCO ₃ /L	730.8 mgCaCO ₃ /L	1.8%
TDS	2320B	4,170 mg/L	4,250 mg/L	1.9%
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. 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
HT-AN	Sample was analyzed outside of the method holding time.
LR-SUR	The surrogate percent recovery was less than the lower acceptable limit indicating a possible low bias.
EBD	Equipment blank detection
FBD	Field blank detection
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.
ERPD-LCS	The LCS/LCSD RPD exceeded the upper acceptable limit indicating poor precision.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,2,4-Trimethylbenzene	SW8260B	WMW-2	2207654-009a	31	50	µg/L	J	MDLRL
1-Methylnaphthalene	SW8270C	WMW-2	2207654-009b	4.6	5	µg/L	J	MDLRL
2,4,5-Trichlorophenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	10	µg/L	R	LR-SUR
2,4,6-Trichlorophenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	10	µg/L	R	LR-SUR
2,4-Dichlorophenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	5	µg/L	R	LR-SUR
2,4-Dimethylphenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	10	µg/L	R	LR-SUR
2,4-Dinitrophenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	20	µg/L	R	LR-SUR
2-Butanone	SW8260B	EB 7/13/2022	2207654-011a	4.2	10	µg/L	U	FBD, MDLRL
2-Butanone	SW8260B	FB 7/13/2022	2207654-012a	5.2	10	µg/L	J	MDLRL
2-Chlorophenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	5	µg/L	R	LR-SUR
2-Methylphenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	10	µg/L	R	LR-SUR
2-Nitrophenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	10	µg/L	R	LR-SUR
3,4-Methylphenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	10	µg/L	R	LR-SUR
4,6-Dinitro-2-methylphenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	10	µg/L	R	LR-SUR
4-Chloro-3-Methylphenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	5	µg/L	R	LR-SUR
4-Nitrophenol	SW8270C	WMW-8	2207654-001b	ND	10	µg/L	UJ	ERPD-LCS



Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
4-Nitrophenol	SW8270C	WMW-3	2207654-002b	ND	10	µg/L	UJ	ERPD-LCS
4-Nitrophenol	SW8270C	WMW-6	2207654-003b	ND	10	µg/L	UJ	ERPD-LCS
4-Nitrophenol	SW8270C	WMW-1R	2207654-004b	ND	10	µg/L	UJ	ERPD-LCS
4-Nitrophenol	SW8270C	WMW-5	2207654-005b	ND	10	µg/L	UJ	ERPD-LCS
4-Nitrophenol	SW8270C	WMW-7	2207654-006b	ND	10	µg/L	UJ	ERPD-LCS
4-Nitrophenol	SW8270C	WMW-9	2207654-007b	ND	10	µg/L	UJ	ERPD-LCS
4-Nitrophenol	SW8270C	WMW-4	2207654-008b	ND	10	µg/L	UJ	ERPD-LCS
4-Nitrophenol	SW8270C	WMW-2	2207654-009b	ND	10	µg/L	UJ	ERPD-LCS
4-Nitrophenol	SW8270C	EB 7/13/2022	2207654-011b	ND	10	µg/L	UJ	ERPD-LCS
4-Nitrophenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	10	µg/L	R	ERPD-LCS, LR-SUR
Acetone	SW8260B	Trip Blank	2207654-013a	2.6	10	µg/L	J	MDLRL
Alkalinity	SM2320B	WMW-9	2207654-007C	1376	50	mg/L CaCO3	J	HT-AN
Arsenic, Dissolved	SW6010B	WMW-8	2207654-001E	0.02	0.02	mg/L	J	MDLRL
Barium, Dissolved	SW6010B	WMW-5	2207654-005E	0.0053	0.02	mg/L	J	MDLRL
Barium, Dissolved	SW6010B	DUP 7/13/2022	2207654-010E	0.005	0.02	mg/L	J	MDLRL
Bicarbonate as CaCO3	SM2320B	WMW-9	2207654-007C	1376	50	mg/L CaCO3	J	HT-AN
Carbonate	SM2320B	WMW-9	2207654-007C	ND	5	mg/L CaCO3	R	HT-AN
Ethylbenzene	SW8260B	WMW-9	2207654-007a	35	50	µg/L	J	MDLRL
Naphthalene	SW8260B	WMW-2	2207654-009a	26	100	µg/L	J	MDLRL
Nitrogen, Nitrate	E300	WMW-5	2207654-005C	0.27	1	mg/L	J	MDLRL
Pentachlorophenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	40	µg/L	R	LR-SUR
pH	SM 4500-H+ B	WMW-8	2207654-001C	7.96	-----	Std Units	J	HT-AN
pH	SM 4500-H+ B	WMW-3	2207654-002C	7.76	-----	Std Units	J	HT-AN
pH	SM 4500-H+ B	WMW-6	2207654-003C	7.99	-----	Std Units	J	HT-AN
pH	SM 4500-H+ B	WMW-1R	2207654-004C	7.48	-----	Std Units	J	HT-AN
pH	SM 4500-H+ B	WMW-5	2207654-005C	7.47	-----	Std Units	J	HT-AN



Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
pH	SM 4500-H+ B	WMW-7	2207654-006C	8.27	-----	Std Units	J	HT-AN
pH	SM 4500-H+ B	WMW-9	2207654-007C	8.09	-----	Std Units	J	HT-AN
pH	SM 4500-H+ B	WMW-4	2207654-008C	8.02	-----	Std Units	J	HT-AN
pH	SM 4500-H+ B	WMW-2	2207654-009C	7.91	-----	Std Units	J	HT-AN
pH	SM 4500-H+ B	DUP 7/13/2022	2207654-010C	7.73	-----	Std Units	J	HT-AN
pH	SM 4500-H+ B	EB 7/13/2022	2207654-011C	6.16	-----	Std Units	J	HT-AN
Phenol	SW8270C	DUP 7/13/2022	2207654-010b	ND	20	µg/L	R	LR-SUR
Selenium, Dissolved	SW6010B	WMW-8	2207654-001E	0.038	0.05	mg/L	J	MDLRL
Selenium, Dissolved	SW6010B	WMW-6	2207654-003E	0.041	0.05	mg/L	J	MDLRL
Selenium, Dissolved	SW6010B	WMW-5	2207654-005E	0.047	0.05	mg/L	J	MDLRL
Selenium, Dissolved	SW6010B	WMW-4	2207654-008E	0.047	0.05	mg/L	J	MDLRL
Selenium, Dissolved	SW6010B	DUP 7/13/2022	2207654-010E	0.039	0.05	mg/L	J	MDLRL
Selenium, Dissolved	SW6010B	WMW-1R	2207654-004E	0.0065	0.005	mg/L	JB	EBD
Silver, Dissolved	SW6010B	WMW-3	2207654-002E	0.0019	0.005	mg/L	U	EBD, MDLRL
Silver, Dissolved	SW6010B	WMW-6	2207654-003E	0.0013	0.005	mg/L	U	EBD, MDLRL
Silver, Dissolved	SW6010B	WMW-5	2207654-005E	0.0037	0.005	mg/L	U	EBD, MDLRL
Silver, Dissolved	SW6010B	WMW-7	2207654-006E	0.0011	0.005	mg/L	U	EBD, MDLRL
Silver, Dissolved	SW6010B	WMW-2	2207654-009E	0.001	0.005	mg/L	U	EBD, MDLRL
Silver, Dissolved	SW6010B	DUP 7/13/2022	2207654-010E	0.0042	0.005	mg/L	U	EBD, MDLRL
Silver, Dissolved	SW6010B	EB 7/13/2022	2207654-011E	0.0012	0.005	mg/L	J	MDLRL
Xylenes, Total	SW8260B	WMW-9	2207654-007a	51	75	µg/L	J	MDLRL



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 144108

CONDITIONS

Operator: Western Refining Southwest LLC 539 South Main Street Findlay, OH 45840	OGRID:
	267595
	Action Number:
	144108
Action Type:	
[UF-DP] Discharge Permit (DISCHARGE PERMIT)	

CONDITIONS

Created By	Condition	Condition Date
scwells	Per 9/27/22 email to Mr. John Moore, must test for arsenic at applicable WQCC standard of (0.01mg/L) during all subsequent groundwater monitoring events.	10/17/2022